Realcomm EDGE

@ the Intersection of Commercial/Corporate Real Estate and Technology

May 2011

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CONFERENCE EDITION


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FROM THE PUBLISHER

Jim Young
Founder and CEO
Realcomm

"Today, the complexity of functions the CIO and their team is responsible for is extraordinary."

Mission Impossible?

Keeping Pace with Changing Technology

The role of the CIO has evolved dramatically over the last decade. It was not too long ago that installing workstation software, managing e-mail and keeping the accounting system working were the top priorities of the IT department. What a difference 10 years can make.

Today, the complexity of functions the CIO and their team is responsible for is extraordinary. Cloud computing, mobile enterprises, solution integration, social networking, intelligent buildings, digital signage and video conferencing are just a few of the new technical platforms that are part of the daily life of a CIO. That is in addition to accounting, property management, lease management and all the other real estate specific automation projects managed by a real estate company.

Over the last five years, we have created a "topic universe" listing of over 400 topics, issues, and technologies that the real estate technology professional must be capable of handling proficiently in this new paradigm. Combined with multiple levels of integration, added participation and interest by the business units, increased consumer awareness and higher expectations (think iPad), and change that is occurring at an unparalled pace, it is easy to appreciate that some consider it "Mission Impossible."

To maximize the CIO and IT department's impact on the business, and minimize the number of mistakes made, there are several important areas to be considered. Executive sponsorship, project prioritization, budget synchronization, team selection and management, and an effective and efficient project management protocol are just a few of the things that are needed for the IT team to have a reasonable chance at success.

Certain individuals and organizations are better at keeping pace with technological change than others. Witnessing the different approaches to this problem, it becomes obvious that there are precise skills and methodologies that are required. Experience (measured in years), evolution in skill set (tactical to strategic) and the capacity to manage a team all play into an IT leader's ability to manage change. Understanding the big shifts (again, think iPad or enhanced mobile computing) and being able to distinguish them from the smaller, more tactical changes will allow the IT team to make the appropriate decisions.

Amongst all the questions, big and small, to be considered when evaluating hundreds of technology solutions, the decision pertaining to team structure may be the most invaluable. Over the past few years we have discussed in depth the topic of in-sourcing, outsourcing, right-sourcing and so on. Once the decision has been made to utilize another organization to implement a particular solution or technology, it now requires a level of management that might be distinctly different than the team may be used to. Consider all the decisions that would go into deploying an iPad enterprise server (finding the unique talent, integrating it into a Microsoft platform) only to discover a year later that the Android is the mobile device du jour. Clearly, a number of tactical and strategic decisions have to be made correctly to best mitigate risk.

The one thing we have clearly seen consensus on is that technology is changing faster than ever before, and the integration/interoperability issues are more complex than ever. Business is engaging more, thus increasing the sophistication of requests and amount of activity from IT.

This year at the Realcomm conference in Orlando, we will address these and other tough issues to help those responsible for technology decisions keep pace with these changing times. We'll be talking about topics like "Monday morning solutions" based on SharePoint, developing a social media strategy, and smart ways of harnessing the iPad revolution within your organization. We'll also present some new, really "big" ideas on things like global property management platforms, advanced lighting strategies and low voltage DC microgrids for commercial properties.

Now more than ever, we need to run our real estate organizations at the most efficient and optimum levels and constantly look for ways technology, automation and innovation can increase revenue streams and contribute to the overall strategic goals of the business. •

Data Analytics: The Solution for Smart Building Operations

John Petze, CEM
Co-Founder and Partner
SkyFoundry

We are awash in data. It seems that just a few short years ago our major focus was to be able to get data out of the automation systems and smart devices in our buildings. IP-based connectivity and the improved communications features of today's systems deliver on that need, providing access to operational data via a number of standards mechanisms.

Contained within this operational data are the keys to better building performance: trends, correlations, exceptions, deviations, equipment faults, opportunities to enhance operations, and information to justify and validate investments in energy saving measures. The challenge is to find what matters in all of that data.

Analytics as a Solution

We have come to learn that too much data looks amazingly similar to no data at all. Similar to my overfilled attic, if I can't find "it" I might as well not have "it." If we don't have tools to effectively manage and analyze this data, the secrets it contains will remain hidden. The rapidly advancing field of analytics is the key to turning the data from our smart systems into actionable intelligence. Analytics software provides the capability to automatically analyze building, energy and equipment data to identify patterns, enabling us to uncover operational issues and understand performance trends, all of which are essential to guide the way to better facility operation.

Analytics tools enable us to capture the knowledge of domain experts in rules and algorithms. These rules then run against the data produced by smart systems to automatically identify issues worthy of attention. The result: the capability to show facility managers what they need to know about the performance of their systems.

Business Value

A couple of examples show how analytics can deliver tangible business value to our organizations:

Example 1: Improving effectiveness and efficiency of maintenance operations by automatically identifying equipment faults

Broken or malfunctioning equipment is a reality in building systems. Many failures cause equipment to stop operating entirely. These failures typically cause a major comfort problem and operations personnel will likely receive an alarm in addition to a phone call or complaint from occupants.

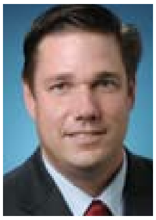
But what about the types of problems that don't result in full equipment failure but rather, cause excessive energy consumption and shortened equipment life? How do we find them? Lets take the example of outside air dampers. They are expected to be in the "closed" position allowing only minimum intake of outside air when humidity is high on hot days. If they remain open during those periods a tremendous amount of additional energy is required to cool the air. But it does get cooled and occupants typically don't notice. This condition could continue for days, weeks or months resulting in significant energy waste.

An automated analytics system can identify this type of problem quickly and effectively. By running the temperature differential between the mixed air and return air sensors through an algorithm, the system can quickly identify that outside air is being brought in during a period

continued on page 40

John Petze, C.E.M., is a partner in SkyFoundry, the developers of SkySpark™, an analytics platform for building, energy and equipment data. John has over 25 years of experience in building automation, energy management and M2M, having served in senior level positions for manufacturers of hardware and software products, including Andover Controls, Tridium, and Cisco Systems.

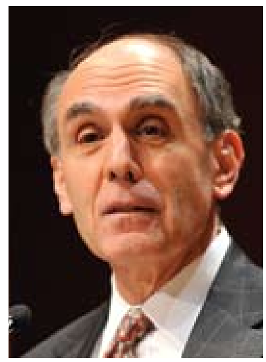
GSA Puts Real Estate Industry-Leading Strategy Into Action!



Rob Murchison
Intelligent Buildings, Inc.

"Converging M&C systems on a secure, IT network enables PBS buildings to support the GSA sustainability plan, cut energy use, construction and operating costs, and enhance the tenant experience."

In the May 2010 issue of *RealcommEdge*, the GSA's Public Buildings Services (PBS) led by Commissioner Bob Peck was featured as the cover story because of their industry-leading strategy and plans. They had begun a smart building transformation process for their substantial portfolio that includes owning or leasing 9,600 properties in 2,100 communities in all 50 states and the US territories. As the primary landlord and real estate broker for the civilian federal government, PBS acquires space and manages federal properties across the country. The breadth and depth of this portfolio means that PBS can positively influence and move the real estate market as a whole, toward greater cost efficiencies in construction and operations.



In the article Peck stated, "People are the lynchpin of the strategy and they are the only way to achieve game-changing operational excellence goals. No technology can replace effective management, make necessary building improvements and meaningfully collaborate with tenants."

This means major changes in organizational structure, building standards and operational policies, a particular challenge within such a large organization. However, PBS has indeed changed with impressive speed and impact. This achievement has not gone unnoticed in the private sector, and PBS has engaged in discussions with leading commercial and corporate real estate leaders to collaborate and communicate on establishing new 'personnel strategies' and leveraging cost-effective technologies.

Leading these changes for PBS is Lawrence Melton, Assistant Commissioner of Facilities Management and Services Program (FMSP), who is driving the collaboration with the private sector. He has executed the internal changes with effective cooperation between peer offices such as Design and Construction and the PBS Chief Information Office. This cooperation culminated in an official policy document signed by Melton, William Guerin, Assistant Commissioner for Design and Construction, and Phillip Klokis, PBS Chief Information Officer, which established a new approach for all building controls systems in GSA built and managed buildings. These executives are responsible for all design, construction, operations and technology for 370 million square feet. This is the type of decisive action that Peck hopes will "make the market" and drive lasting changes that improve building energy and operational efficiency, and ultimately deliver more sustainable and cost efficient operations.

In summary, the policy states that all building controls systems such as HVAC, lighting, metering, security cameras, physical access control, elevator, renewable energy controls and others will comply with industry standard, open protocols to reduce life cycle maintenance cost and promote interoperability and data availability. Additionally, the policy calls for elimination of disparate cabling and communications networks that support such controls systems, along with a requirement that IP-addressable devices be on a secure network. This will improve electronic security and reliability and promote interoperability. The policy states, "Converging M&C systems on a secure, IT network enables PBS buildings to support the GSA sustainability plan, cut energy use, construction and operating costs, and enhance the tenant experience." This policy not only applies to new construction, but also retrofits such as planned system refreshes and other controls-affecting building alterations. Thus, in addition to new construction projects, PBS will also be making progress toward a more open, flexible infrastructure with every planned alteration and purchase in the normal course of business.

Rob Murchison is co-founder of Intelligent Buildings, Inc. (www.intellgientbuildings.com), which provides strategic technology consulting for real estate stakeholders. He serves as a real estate technology strategy consultant for the GSA/PBS.

In the normal course of business, Melton's FMSP group is responsible for multiple departments and functions like other large real estate facilities groups. As part of the PBS transformation he is retooling his organization including the creation of a Smart Buildings Program led by Frank Santella.

Santella now coordinates PBS efforts for energy, operations, security, environmental and commissioning groups. This was a momentous change and a model for the industry because all these groups are now aligned through a "smart buildings" strategy. In addition to applying the new policy, Santella has already made plans for the integration of BAS systems with energy metering programs and security functions as well as a technology-based ongoing commissioning approach to lock-in efficiency gains. The Smart Buildings Program is actively engaged with field teams on 30 construction projects, and refining plans to leverage technology to improve operations on an initial 50 existing buildings. All of these buildings will utilize a low-cost, high value approach that uses "softer" solutions such as software, data analysis and new operational methods to get similar or better results than more costly equipment replacement.

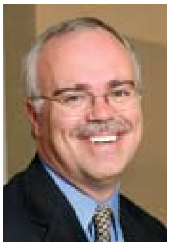
U. S. Port of Entry--Warroad, Minnesota

It is notable that nearly all of these changes are low- or no-cost and mainly affect how PBS builds and manages planned or existing buildings through strategy, staffing, software and purchasing filters. This approach will establish a new way of doing business that will lock in savings over the long haul by increasing existing asset utilization and reduce the actual cost-structure of operating their buildings.

These milestones all demonstrate how PBS has put their industry-leading strategy into action with bold initial steps. PBS feels that as a government service it has a role and responsibility to share this information and invites others in the real estate industry to observe, critique and collaborate along the way. Look for more updates and information as the strategy continues to evolve. •

Dr. A.H. Mccoy Federal Building Modernization--Jackson, Mississippi

2011: Mobile Devices and Enterprise Disruption



James J. Whalen, Jr.
SVP / CIO
Boston Properties

"The swift embrace of mobile technology by employees has blurred the lines between consumer and business use, and raised important questions for IT managers."

Enterprise IT staffs are experiencing a period of disruption. Forced to navigate the rapid evolution within mobile technology, enterprises are faced with questions of business need, security, liability, platform alignment, cost and speed. This pace of change in mobile is unprecedented and answers were needed yesterday.

Over the course of my career, I've traversed the introduction of the PC in the workplace and the transition to client-server and the web, but this new era of mobile technology is different. Unlike changes in the past, which were dictated by enterprise standards, mobile is being defined by the end consumer and global accessibility. With over 700 million subscribers currently connected to 3G networks worldwide, access and standards will continue to increase to meet the needs of the end user, not the company for which they work.

Mobile is about collaboration and consumption, it's a personal experience. The swift embrace of this technology by employees has blurred the lines between consumer and business use, and raised important questions for IT managers: How are you leveraging these technologies for the benefit of your business? How are employees using 'enterprise' devices for personal purposes? What is the profile of your 'enterprise consumer'?

For North America's mobile market in 2011, we can expect a dramatic transition as mobile technology becomes increasingly competitive, capital investment continues to pour into the space, and consumer spending realigns the expectations of our workforces and customers. Tablets are now equally as important as handsets and are already driving data consumption levels, the need for speed and demand for new device capabilities. Since iPad's launch in April 2010, Apple has served as the leading initiator of these changes, but Google and others are gaining in adoption and feature innovation—two companies not exactly synonymous with business in years past.

For IT managers, there are a number of trends to consider, but one central question must be answered: What is your approach to corporate versus personal liability for mobile devices and usage? Many companies currently assume complete responsibility for costs, support and losses, but market forces and usage dynamics will necessitate a reevaluation of this approach.

It's Personal!

BlackBerry is business. Its adoption in North America surged from 3.6 million in late 2005 to over 12 million in late 2008, and was solely driven by enterprise use of email, calendars and contacts. With Apple celebrating its 10 billionth app download in January, usage patterns have changed dramatically and are clearly driven by personal 'productivity,' social media and data consumption. Pandora, which just filed for an initial public offering, has 80 million registered users and over 50% of its monthly growth is attributed to mobile users.

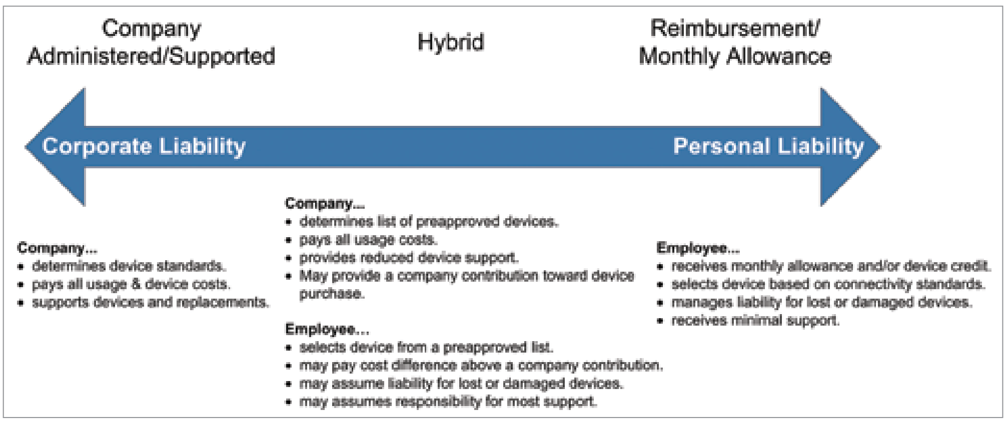
IT staffs and enterprise applications are slow to respond and will continue to play catch up to a consumer driven application landscape. Advancing mobile technologies are changing expectations about user interfaces and functionality of software and applications that employees interact with on a daily basis. How does an enterprise craft a mobile plan and cost model when devices are increasingly used for personal benefit with less workplace control? The enterprise's ability to assess business and productivity benefits from its mobile program will be reduced. Managers will have to determine what mobile technologies employees need to be productive, and how much business data will be consumed on mobile devices beyond e-mail.

The Race for Speed … How Fast Can I Get My Data?

The billions of investment dollars going into carrier networks built on LTE (Long Term Evolution) technology will ultimately define a new user experience. Verizon Wireless will reportedly increase its LTE '4G' network from 37 to 127 mar-

Jim Whalen has served as the CIO of Boston Properties since 1998. A graduate of the University of Notre Dame, he was the Vice President of Information Systems at Beacon Properties from 1993 to 1998.

kets by the end of 2011. AT&T is investing in distributed antenna systems to offload data bandwidth and throughput demands at arenas, hospitals and commercial office buildings. How are real estate companies positioning their assets to ensure adequate data connectivity and throughput rates for their workforce and customers? The rise of near field communications (NFC) that makes promotion and payment easier at retailers has the promise to transform on-premise commerce.



On the Meter!

It is not about minutes, it's about data. In the past year, data surpassed voice, but still lags behind texting. Mobile is no longer just about communication, it's about content consumption. With the move to the LTE protocol, data transfers become the central driver to carrier revenue. The days of unlimited data plans will soon end and accounts will be structured around gigabit plans. When a high-definition movie requires three gigabytes for its download, a monthly allowance plan can quickly be consumed. How does an enterprise mobile plan and cost model adapt to rated data plans when usage patterns start to vary widely across your workforce?

Which Mobile Operating System to Choose?

Eighty new tablets were announced at the Consumer Electronics Show (CES) in January. With BlackBerrys, it is feasible to effectively keep and maintain the same device in good working order for a two year contract period while standards and inventory management kept device costs close to zero. Moving beyond BlackBerrys, the pace of operating system innovation will potentially change purchase behavior by employees. Current device purchases are significantly underwritten with two year commitment plans, but replacement costs are trending higher. How does an enterprise mobile plan effectively cap its costs for equipment?

Corporate versus Personal Liability

Companies are grappling with the challenge of maintaining costs while at the same time offering greater flexibility and device options, thus offering a work-life balance. Outside of real estate, companies are increasingly moving toward models where costs and liabilities are shared, either for the device or implementing a standard monthly reimbursement through payroll. For example, who pays for a lost or damaged device at replacement costs exceeding $600?

Other challenges including security, support and administration are important factors in adapting your mobile device program. With 70% of Fortune 100 companies having already implemented or exploring the iPhone and Android as an option for their workforce, old assumptions will have to be questioned in order to manage costs, liability and staff resources.

At the same time, anecdotal evidence of efficiency or a positive sales impact can be heard from individuals who are experimenting with these new tools. Recently, a project manager shared his collaboration with an architect using Dropbox on his iPad in annotating drawings to expedite the design process. During a recent showing, a leasing representative handed over his iPad to a prospective tenant so she could interact with a floor plan and other visuals.

2011 will be a year of transition on many fronts: the network, devices, account plans and usage patterns. The major carriers are ill-prepared to adapt their programs and support for their enterprise customers. Acknowledging these moving targets and being pre-emptive in navigating these disruptive forces will be paramount to a successful service, support and cost model for your enterprise. •

David Schacht
CIO for Simon Property Group

Turning the Corner from Cost Containment to Creating Business Value with Technology

Over the years, we've watched the role of Chief Information Officer (CIO) in many organizations transform from tactical "tech guru," primarily responsible for keeping the computers running and email flowing, to a strategic partner and team player at the highest executive levels. Technology is now becoming a C-Suite discussion that focuses on organizational issues such as lowering costs, increasing revenues, improving customer/client relationships, increasing organizational competitiveness and reducing a firm's reliance on energy.

As the business world evolves, the role of the CIO continues to evolve with it—and these changes mean that today's CIO is in an ideal position to take increased business responsibility and control. One thing has become very clear—today's CIOs need both business and leadership skills as well as technological ability.

RealcommEDGE sat down with Steve Messaros, CIO for Liberty Property Trust (NYSE:LRY), a $6.4 billion real estate investment trust that owns 79.7 million square feet of office and industrial space in over 20 markets throughout the U.S. and U.K., and David Schacht, CIO for Simon Property Group, an S&P 500 company and the largest real estate company in the U.S., with interest in 393 properties comprising 264 million square feet of gross leasable area in North America, Europe and Asia. They discuss their views on the changing role of the CIO and how they are creating business value with technology in their organizations.

Steve Messaros
CIO for Liberty Property Trust

Realcomm: Out of 10 CIOs, how many would you say understand how to communicate and deliver a business driven technology strategy?

Schacht: I'm not sure it is fair for me to estimate how many CIOs can communicate and deliver a business driven IT strategy, but I think it's probably less than half. This is evidenced by the high turnover in the CIO position in general. The key part of this question is 'communicate and deliver'. The communication occurs at the highest levels in a company and the message is business focused. The delivery is accomplished with the use of technology, business process and policy changes. This requires the CIO to have deep and balanced knowledge of business and technology. Having an insufficient foundation of either business or technical abilities can result in failure. A CIO who has insufficient experience in business may fall prey to poor software, telco and consulting agreements. He may also tend to have more interest in the cool factor of new technology rather than a primary focus on business improvement. As such, the technical CIO delivers technology, but not value to the business. A CIO who is more business minded doesn't have a filter for the techno babble, false promises and hype cycles that occur in technology. As such, the business minded CIO usually knows what to do, but is at risk of failing at execution because of missed expectations regarding delivery times and cost. The depth and balance of technical and business knowledge is paramount to a CIOs success but is fairly uncommon.

Messaros: Another way to ask this question would be "Out of 10 Real Estate Companies how many have a long term strategy that instills technology and future technology trends as a core component?" Unless there is a unified view of technology and its impact on the future of a real estate company and real estate in general, a truly impactful business driven IT strategy is very difficult to achieve. All of the CIOs that I have met over my career are clearly capable of both understanding and communicating this message. However, without a unified goal/vision that a long term strategy provides for an organization, it is very difficult for a CIO to cajole, convince or corral all of the key decision makers across the various departments and lines of business into a single vision and prioritization of investment. The strategy provides the basis to initiate cross-departmental conversations with a common foundation. We CIOs need to earn our spot as a senior level executive at our companies, prove our worth and contribute to the corporate strategy creation and execution.

Realcomm: Should a business driven IT strategy get driven down from the top executive level or up from the IT level and why?

Schacht: To be fair, every company is different and culture will have a big impact on how to effectively develop the IT strategy. That being said, in a perfect world I don't think it is driven from the top or from IT. An effective business driven IT strategy starts with business objectives and is developed by a team comprised of business and technology executives.

Messaros: IT visibility and participation at a company is (or should be) at the top executive levels of a real estate company already. Big picture goals and objectives are refined at this senior level via the strategy and execution plan. Once these goals have been set, multidiscipline project teams should execute them, reporting back periodically on key decisions and the stress testing on those decisions, milestones achieved and general project health. Few projects that will have a truly transformative impact on the organization are owned solely by the IT department anymore. We are embedded in business teams to accomplish enterprise initiatives.

Realcomm: What do you do if your executive level doesn't get the strategic benefits of technology?

Schacht: Identify multiple business leaders who have benefited from technology investments and let them help evangelize the business benefits of investing in technology. Some examples might be quantifiable reduction in DSO and AR, improved tenant opening processes by "X" days, or many other business metrics. The message will always carry more weight when it is communicated in business terms by your business peers.

Messaros: One of the first things you can do is to stop talking about the technology. Executives at a real estate company care first about real estate. Second they care about real estate, third, fourth and fifth, it's still the real estate. How can we lease real estate more profitably and quickly? How can we improve the yield on real estate? How can we operate our real estate more efficiently than our competitors and provide competitive advantage in the marketplace? How can we identify market opportunities and risks more quickly and execute efficiently? Learn the real estate business and your enterprise's business processes and decision points. Provide meaningful, actionable information and a means to execute those actions. Show the value, measure it and report on it. Communicate your message to the executive team. When you think you've communicated it enough, repeat the message again.

Realcomm: What event or circumstance have you seen change an executive's perspective on technology from tactical to strategic?

Schacht: There are many, and they vary from back office accounting processes to leasing. Most if not all of the examples involve a business leader's admission that they don't know how we did something prior to a specific technology improvement. At Simon, we've had a lot of success with data warehousing and BI for Leasing and Accounting. We've also done a lot with using BPM tools to improve our processes.

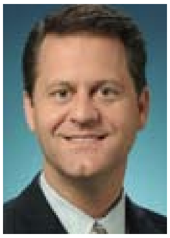
Messaros: Apart from the obvious answer where a real estate company creates a strategic plan and subsequently develops tactics and goals to achieve those strategic objectives, let's focus on the specific role of technology at a real estate company. When an executive asks, 'How can we separate ourselves from the competition and provide greater value to the customer at a lower cost?', he or she is really talking about the development of re-engineered business processes, people and technology on a strategic basis. One of our first examples was when we were experiencing push back from tenants for excessive operating and maintenance costs compared to the marketplace. How do we reduce our overhead, take on more work, identify workload bottlenecks, become more proactive and less reactive to maintenance; doing all of this AND increase customer satisfaction? The deployment of a Customer Work Order System, along with process improvements and employee training, provides those benefits plus more. However, in order to close the loop (once the project was complete) and provide the education feedback necessary to reinforce the strategic value created, we needed to measure the impact, the savings and benefits in a pre-defined objective methodology, provide transparency to the data and report back to the executive team.

Realcomm: What advice would you give to a new CIO that is trying to establish a business driven strategy inside the IT organization?

Schacht: Establishing the expectation that the business needs are the driver for the technology strategy is a good start. As such, IT staff and managers must spend time with their business peers learning their processes, challenges and opportunities. Through this process, IT has the opportunity to become a trusted business partner and a key resource for business improvement. This doesn't happen by simply being an order taker. It requires a deep understanding of the business and the ability to present solution alternatives in a consultative fashion.

Messaros: The best advice would be to earn a seat at the executive management table. Participate in the corporate strategy discussions and ensure that technology has an active role in the planning and scenario process. Learn the business of real estate, especially how your company creates value and specifically what it values in the marketplace. Create new opportunities to increase that value and you have probably just earned that seat. Finally, don't rely on someone else to notice your efforts and translate that into business value. Speak real estate, communicate real estate and prove value. •

Charlotte Leads with Global Model for Sub-Markets



Tom Shircliff
Intelligent Buildings, Inc.

In September of last year, former President Bill Clinton, flanked by Duke Energy CEO Jim Rogers, Cisco CEO John Chambers, Charlotte Mayor Anthony Fox and the CEO of Charlotte Center City Partners Michael Smith, announced Envision: Charlotte, a unique collaboration between corporate-citizens, government and academia that is leading Charlotte to become a global model for environmental sustainability and measurable community results.

The foundation of the effort is a powerful program that leverages smart grid technologies and digitally connects all office buildings in downtown Charlotte with smart meters, wide-area networking and a digital media platform. The media element will include large interactive display screens in the lobby of every downtown office building over 10,000 square feet. The screens will continuously track and display the energy and emissions in near real time. All of the participating buildings will commit to reducing their cumulative energy use by 20% within five years through a combination of real-time awareness, behavioral changes and innovative new technologies such as sophisticated software analytics. The reduction in energy consumption will reduce building owner's operational costs proportionately. The base cost of the program is five million dollars and is funded by Duke, Cisco and Verizon, with anticipation of strong business value and new business models.

In addition to these benefits, Envision: Charlotte believes environmental sustainability, when combined with a pro-business approach, benefits the regional economy. This conviction builds on the Charlotte region's "New Energy Capital" economic development initiative that was announced by North Carolina Governor Beverly Perdue, city and business leaders in April 2009. Today, the region is home to more than 240 energy companies, employing more than 26,000 people.

The Governor has state representation on the Envision: Charlotte steering committee as does the city, county, local and regional economic development groups, leading corporations, academia and The Environmental Defense Fund. The steering committee is leveraging the energy program's fast start to build similar model programs around water, waste and air-quality in addition to leading edge financing models. However, they are being careful to stay focused on discrete, measurable programs that produce results for the environment and the economy. In addition to this internal activity, the Envision: Charlotte steering committee has reached out to and is collaborating with other leading community-based environmental groups such as the Portland Institute of Sustainability and the Pecan Street Project (Austin). This effort will demonstrate that Charlotte's center city is a measurably more sustainable and lower cost location to do business, which in turn benefits the region and serves as the model for other sub-markets.

Jim Rogers, Duke Energy Chairman and CEO notes, "Charlotte's uptown within the I-277 loop is a highly concentrated urban area that provides an excellent site to demonstrate what is possible with advanced energy efficiency and smart grid technologies. We are eager to promote Envision: Charlotte to our customers who depend on us for reliable electricity 24/7—and work with our partners in this initiative to show them just what can be possible with better information about their energy use and these exciting new technologies."

Awareness and behavioral changes will be driven specifically by that 'better information about energy use' and other environmental data

Tom Shircliff is the co-founder of Intelligent Buildings, Inc., a real estate strategy consulting firm based in Charlotte, NC. He is active in Charlotte's energy and sustainability efforts including membership on the Envision: Charlotte steering committee.

on every building's display screens, coordinated with web coverage and smart phone apps that will help individuals learn about and track their own impact along with the measured, aggregate impact. These tools add a strong social aspect in addition to the economic and environmental aspects that will engage downtown workers, but also allow them to use the technology to share their awareness with family and friends beyond the workplace.

"As cities all over the world experience significant population growth, the need to sustainably balance social, economic and environmental resources becomes more critical because urban areas currently contribute at least 60 percent of global carbon emissions," says John Chambers, Cisco Chairman and CEO. "Cisco believes that technology can transform how the world manages these energy and environmental challenges. The announcement of this public-private collaboration between Duke Energy, Cisco, the City of Charlotte and others demonstrates how we can change energy use habits and consumer behavior through innovation and operational excellence."

(From left to right: Charlotte Center City Partners CEO Michael Smith, Charlotte Mayor Anthony Foxx, President Bill Clinton, Cisco Chairman and CEO John Chambers and Duke Energy Chairman and CEO Jim Rogers)

Charlotte is uniquely positioned to create this model because of its historical alignment between government and business, the strong research capabilities of the University of North Carolina at Charlotte, regional energy strengths and a deep spirit of citizenship and community.

Michael Smith, President and CEO of Charlotte Center City Partners, agrees. "Charlotte differentiates itself by taking a very 'private sector' approach to city-building through the action of corporate leadership. With Envision: Charlotte, we are once again setting a priority of environmental sustainability and creating an architecture that aligns infrastructure investments, research, policy and commerce to achieve a shared goal."

To date, business and local government leaders controlling more than 15 million square feet of space have committed to participate in the foundational program for Envision: Charlotte in an effort to reduce energy use by up to 20% and avoid approximately 220,000 metric tons of greenhouse gases by 2016. These organizations include:

- Bank of America (NYSE: BAC), which is headquartered in Charlotte and controls approximately 7 million square feet
- Wells Fargo (NYSE: WFC), which has its eastern bank headquarters in Charlotte and controls approximately 3 million square feet
- The city of Charlotte and Mecklenburg County, which controls approximately 1.4 million square feet
- Duke Energy, which is headquartered in Charlotte and controls 1.3 million square feet

Vincent Davis, Director of Smart Energy Community Projects for Duke Energy, has seen enthusiastic interest from the building owners in downtown Charlotte and has been responsible for signing participation contracts with many of them. Davis comments, "We have had excitement and enthusiasm from the owners we have contacted, who are committed to both economic and environmental sustainability and are also anxious to utilize digital technologies to help increase awareness and reduce costs."

This approach to community environmental and economic sustainability will surely be watched by many different stakeholders in government, business and elsewhere and is attracting interest from a growing list of companies anxious to participate as part of the model, either as providers or sponsors. There have also been requests by a growing number of organizations for Duke Energy to showcase the energy program, including appearances or scheduled appearances at the Edison Foundation's "Powering the People" in Washington, DC, the MIT Energy Conference in Cambridge and the Energy Efficiency Global Forum in Belgium.

With the announcement that the next Democratic National Convention will be held in Charlotte, it is anticipated that the program will get significant additional exposure as the eyes of the world and 15,000 reporters turn to the city in 2012.

This announcement by the former president can be seen at *www.envisioncharlotte.com.* •

Bringing Efficient, Intelligent Lighting to Buildings Through Wireless Control

Joshua Slobin
Director of Solutions Marketing
Daintree Networks

Lighting is one of the largest sources of energy usage on the planet, with nearly $200 billion spent globally each year on energy for lighting. About half of that cost comes from commercial buildings.

Replacing existing lights with more energy-efficient lighting sources such as LEDs is one of the easiest and well-known ways to reduce energy use. In order to reap the full efficiency benefits of such retrofits, however, facility managers must look beyond the source of light, shifting focus to how the lights are used. Automated, sensor-driven lighting control systems can be deployed to improve lighting usage throughout the system, and have proven to reduce lighting energy consumption in commercial and industrial buildings by up to 70%.

Many facility managers are aware of the opportunities in energy-efficient lighting controls such as automatic on/off and dimming, occupancy sensing, daylight harvesting, scheduling, task tuning to suit individual worker's illumination needs, and more. Yet the widespread adoption of energy-efficient controls, specifically in the retrofit space, has been hindered by the cost and complexity of updating—or removing and replacing—existing minimal solutions.

As the commercial retrofit market continues to expand, wireless platforms are the logical next step in making these controls a reality.

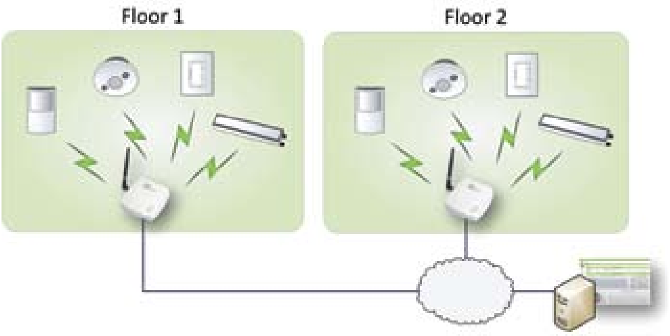
Removing the Wires

In older buildings, traditional lighting systems are hard-wired to a central controller, making installation of new control wiring expensive and exceedingly complicated due to labor, the cost of equipment and wiring, lengthy commissioning times, management and upkeep.

A new generation of control systems is diminishing the concerns around cost and complexity by removing the dedicated control wiring. Wireless solutions are less expensive to install, provide facility managers the ability to monitor and reduce energy consumption in a variety of ways, and reap the benefits of simplicity, scalability, return on investment, and more. Through the use of modern enterprise-class wireless networking technology, system-wide controls strategies can be implemented without significant upgrades or added infrastructure costs.

How Wireless Lighting Controls Work

Wireless lighting control systems communicate commands between lighting devices, including sensors, switches, and the ballasts or LED drivers connected to lights. While traditional lighting control systems may need miles of copper wiring to connect each device, a wireless system uses a controller with an antenna that manages communications between devices.



Each lighting device in the system is wirelessly enabled, either directly by the device manufacturer or with an external wireless adapter. Facility managers and individual users can utilize a software interface to manage the system and change settings, which are then routed

Joshua Slobin brings 10+ years of technology leadership experience to Daintree Networks, where he is responsible for developing the company's industry solutions, ecosystem partnerships and marketing strategy. In addition to the cleantech industry, he has held leadership roles in wireless technology and enterprise networking, both at startups and established market leaders.

through a controller to the individual lights.

Wireless systems are often organized using a "mesh" architecture such as the popular ZigBee standard. This allows each device in the network to communicate with a controller through multiple pathways, as well as relay messages for neighboring devices. Data is passed through the wireless network from device to device using the most reliable communication links and most efficient path, ensuring speed and reliability.

Why Wireless for Lighting Controls?

Some of the benefits that wireless systems provide, above and beyond traditional wired lighting control systems, include:

- Simplicity and ease of use—One of the primary hurdles for large-scale lighting control systems is the proper commissioning of such complex systems. Wireless can improve this process by providing automated methods of design, implementation and ongoing management.
- Cost savings—Since wireless systems reduce the labor and wiring requirements, the associated costs can be significantly lower than traditional systems. For example, a typical 48-ballast building wing for a wired control system requires between 1 and 5 miles of dedicated copper wiring—this is eliminated with wireless control.
- Flexibility—Wireless solutions allow the building space to be used flexibly, with sensors and switches placed where they are needed to improve building performance. As the needs of a space change, wireless controls can be easily reconfigured or expanded simply by reprogramming.
- Scalability—Once a wireless network is established, that network can grow to cover an ever-expanding area at a low additional cost.
- Retrofitting—Finding the right balance of cost and control has been especially challenging in retrofit scenarios, where existing building infrastructure often gets in the way of installing a lighting control system. Wireless provides an ideal solution for retrofits, allowing the existing infrastructure to remain without unnecessary changes, and enabling new devices such as sensors to be placed where needed.
- Energy management—The two-way communication available through mesh networks means that not only can a lighting control system send commands to lights and sensors, it can also receive information back from them for improved energy management as well as measurement and verification.

Additional benefits may include tax incentives, enhanced compliance with LEED and other building codes, and interoperability with an ever-expanding network of in-building smart wireless devices, such as plugloads, blinds, thermostats and more.

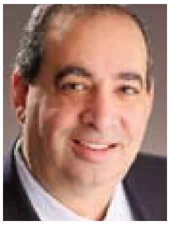
Control Strategy	Lighting Electricity Savings*	Description
Occupancy Sensing	15-40%	Turn off or dim lights when an area isn't in use
Scheduling	10-40%	Turn off or dim lights at set times of the day
Task Tuning	5-20%	Dim lights to tailor maximum light levels of an area to occupant needs
Daylight Harvesting	10-20%	Dim lights in response to ambient/external light levels
Individual Control	5-10%	Allow individuals to control light levels in their personal workspace
Demand Response	Variable	Automatically reduce lighting during peak electricity times
Total Savings	**Up to 70%**	**Cumulative impact of all strategies**

Wireless: the Key to Green Buildings of the Future

Wireless capabilities have brought significant improvements and advancements in other technologies such as cellular communications and the internet, as well as the smart grid and other building systems that are already reaping energy efficiency rewards. The lighting industry will surely follow suit to adopt wireless technology, as removing the wires has proven to deliver on the promise of lighting control by providing even greater benefits, at a lower cost, and to a much broader set of potential customers.

In short, wireless networking is bringing intelligence to a new generation of lighting control systems, helping companies take simple steps to save money and make our buildings greener. •

Keeping the Lights On vs. Lighting Up the Skies:
Out of the Trenches and on the Innovation Offensive



Christopher R. Saah
President
TecFac

In The Trenches strives to deal with the real day-to-day challenges of IT service delivery in the CRE space. These challenges are not purely operational, but include being innovators and delivering value. These articles highlight how we can turn operational challenges into innovation opportunities.

Ensuring that basic technology services are available and robust is core to the mission of any IT organization. At times, this part of our mission competes with our desire to deliver greater value and facilitate innovation. The conundrum is simple: If we fail to deliver core services, whatever innovation we deliver will be overshadowed. However, if we deliver only core services we are simply a cost center maintaining the status quo and our value is diminished. This struggle can keep us on the defensive, always one step away from the next brush fire, in the trenches rather than on the offensive.

This can be especially true of smaller organizations with more limited resources, but in these times can apply to all of us. So the question becomes, how can we take our stretched resources and both maintain operations and provide innovation? The answer: turn operational challenges into innovation opportunities.

For example, many of us deal with the challenges of email. It is overused, under managed, and often taxes our infrastructure. We must keep a constant eye on servers and storage to ensure that we are meeting the demand. Much like painting a large bridge, by the time we get from one end to the other, it's time to start the process all over again.

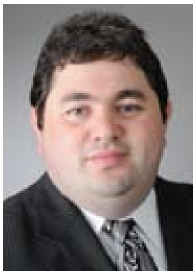
So, when faced with stress on our email platform, do we simply stay in the defensive posture and seek funding for more hardware and upgraded software, or do we go on the offensive and use this as an opportunity to introduce a new document management system to reduce email attachments and size while fostering better collaboration? Or perhaps we deliver automated workflows for common business processes to reduce unstructured, ad hoc communication while bringing more efficiency to the process.

We can be tempted to hold off on the innovation until we "get things under control," but that can lead to a paradigm that, in a sense, puts good money after bad, and perpetuates a dysfunctional model. As George Gilder, the IT futurist, challenged us a few years back at Realcomm, are we trying to solve yesterday's problems or looking for tomorrow's opportunities?

There's an additional benefit to focusing on innovation right at the time of an operational deficiency: organizational focus. People tend to be change resistant by nature and marshaling the necessary resources to introduce new technology can be difficult. Ideally, we would like to think we could so sell the value and benefit of the innovation we seek to introduce that it would make adoption easy and people would be clamoring to get on board. The reality is that the pressures of day-to-day business make it difficult to get stakeholders to invest the time and energy needed to develop and embrace any new process or technology. By leveraging real-time operational challenges, we can foster added motivation for cooperation and buy-in: "Not only do you get these added benefits of efficiency; you avoid the current pain you are feeling."

Good IT service management demands that we focus on the overall quality and value of the services we provide and that we not simply keep the lights on, but that we light up the skies!

Chris Saah is President of TecFac, which provides IT support services to Transwestern and its clients throughout the US. Follow Chris at www.twitter.com/csaahcio.



***Eugene Kesselman** is Chief Information Officer for Transwestern, one of the largest privately held commercial real estate and development firms in the U.S. His IT department provides support to over 1,600 team members at over 280 corporate and management offices.*

Saah: You've been CIO at Transwestern for eight months now, Eugene. What has been your approach to this new role?

Kesselman: My approach is simple: Invest time in one-on-one meetings with business leaders to understand what their needs are and what we can do to help. This helps us uncover the problems and find the pain points. We can then look for common denominators and attack the low-hanging fruit.

Saah: And can you tell us where you have made some advances--what pain points you've found and how you've solved those problems?

Kesselman: The biggest issue has centered around data re-entry and multiple versions of the same data. In short, too many siloed systems.

Saah: How have you addressed that?

Kesselman: We have utilized the capabilities of SharePoint 2010 to begin consolidating much of our data and have already developed three solutions to deliver the information in a more valuable way.

For example, TranSource is our Intranet, which formerly ran on a Content Management System (CMS). We started there because it was a low risk way to integrate a SharePoint 2010 platform, as the site already existed. We incorporated tighter integration between human resources, marketing and property data. Now, team members can look up a colleague, view their bio, contact information, and even what properties they are associated with in terms of leasing and management.

Saah: Was that a data integration nightmare?

Kesselman: Frankly, it was. We actually spent more time on the data than the programming. First, we had to unify the data with unique identifiers. Unfortunately, this type of project is hard to develop synergy for, because while it is necessary, it isn't perceived as that valuable or "sexy." We used the opportunity of the Intranet redevelopment to focus team member energy on the data cleanup portion.

Saah: Sounds like it worked.

Kesselman: By and large it did. We accomplished 90 percent of the clean-up in the pre-deployment phase. We made the decision to roll out the new version of the intranet with what we knew was less than perfect data. Once people began to discover that their bio or property affiliations were outdated, the remaining 10 percent of the clean-up happened quickly.

Saah: Tell us about your other two solutions.

Kesselman: OnePlace is a property life-cycle collaboration suite that is both internal and external facing. It allows our team members, clients and vendors to manage documents and projects, and to collaborate all on one site. Again, this solution was deployed to integrate activities and data that were happening in multiple locations.

TranScend is a geographically-based market intelligence aggregator that brings in public data, our own market knowledge and utilizes Bing to tie in maps and photos.

Saah: So this is a marketing tool?

Kesselman: Yes, we can present a client a map of the overall market and submarkets, then drill down to see the target building, walk the street, view other properties around it, and display all of the data in one platform. This tool provides superior decision support for clients. For instance, a possible tenant can, in one sitting, see all of their building and space options along with the pertinent data for each.

Saah: That is a very exciting project and again, one that sounds like it was quite challenging on the data and product integration.

Kesselman: It was and continues to be. However, we have had excellent sponsorship and involvement from the business lines, which has enabled our team to expand the project much further than we could have on our own. Executives, brokers and marketing team members have been involved at every level, attending every meeting and were highly invested in the outcome. This has made the project a pleasure to work on. The key to success on a project such as this is the ongoing involvement by the business. Additionally, the data has to stay fresh and accurate for the solution to be valuable.

Saah: Well, you have certainly made some great strides in a short time. Where do you see CIOs in our industry making the most contribution?

Kesselman: We simply have to shift from a "service" delivery model to a "value" delivery model. Simply keeping systems and machines running is just not enough to make a difference. If we don't add value that the business lines understand and appreciate, our role is marginalized.

IN THE **TRENCHES**

***Raj Patel** is Vice President, Information Technology for Majid Al Futtaim Properties, a developer and operator of Shopping Malls, Hotels and Mixed-use Communities across the UAE region*

Saah: Tell us about your company, Majid Al Futtaim, and the things you are doing there.

Patel: We are often compared to Westfield or Simon. We build destinations malls. Over here, you can't really be outside for about 6 months out of the year because of the heat. So our malls are outlets not only for shopping, but for entertainment. For example, many people are familiar with Ski Dubai, one of our properties where we offer year round indoor skiing, snowboarding and tobogganing on 5 runs, the longest of which is 400 meters with a 50 meter drop.

Saah: Has the recent instability in the region affected you at all or presented IT challenges?

Patel: Well, actually, yes. We have malls in Egypt that were looted during the protests. Fortunately, we had upgraded the infrastructure for those properties, connected them to our data center here through a private circuit and moved the telephone, email, Blackberry service, and even Internet gateway to Dubai. So, we were able to keep in touch by VoIP and they were able to maintain their Internet and Blackberry even when those services had been blocked in Egypt.

Saah: Very fortunate indeed. Tell us about some of the initiatives you've taken on.

Patel: Well, I came to Dubai over 2 years ago to be a part of the dramatic real estate boom. As the crisis hit Wall Street, I knew it was time to leave NYC and explore this ambitious "Vegas of the Middle East." I had also heard that the UAE was adopting smart building technology faster than any other part of the world other than Asia. To me, what was being attempted was the true "real estate IT convergence," as Jim Young often points out. This is what I wanted to be a part of. Unfortunately, the downturn has slowed much of the more innovative projects I had hoped to undertake. So I used the downturn to retrench and upgrade and strengthen much of our back office.

For example, we are one of the first in the region to move to Windows 7, Office 2010, and Microsoft Exchange 2010. Additionally, we are working on a legacy JD Edwards system on an AS400 platform and data is being moved in and out of Excel spreadsheets for manipulation and reporting; and I'm moving to leverage SharePoint 2010 to aggregate and report this data.

Saah: What challenges have you faced as you've worked to upgrade your infrastructure and back office?

Patel: Several. First, labor is fairly cheap here, so making an ROI case for some projects that do deliver efficiency can be rather difficult. Second, one of my biggest complaints is the number of qualified vendors in the region. The market is not so competitive and that leads to poor support options. I've found many vendors just push boxes and do not really add value to their solutions. And finally, change management has been difficult. As with many companies in our industry, we pride ourselves on stability and we've achieved solid, sustainable growth, and that kind of environment can be slow to embrace change.

Saah: Have you had any success overcoming these obstacles?

Patel: Yes, some. I've reached out to various consultants to help provide the support and expertise I need for our new products. I've also used some operational struggles to promote change. For example, our email system was bogging down under the strain of so many attachments as it had become our defacto document management system. I used this to introduce SharePoint 2010 as a document management platform and various parts of the business have really embraced it now because of its ease of use.

Saah: What new projects do you see on the horizon?

Patel: Well, we plan to continue to partner with Cisco to build a common infrastructure in our buildings. We want to develop extranets for our tenants on SharePoint. And I want to move us toward certificate based authentication and into a "hybrid" cloud model, if you will, over the next year. •

Social Media: Business Value or Wasted Resources?

Howard Berger
Managing Partner
Realcomm

Social media in the commercial real estate industry continues to be a hotly debated topic. Attitudes and policies among different companies are wide ranging and varied. There are clearly sectors where social media strategies are standard procedure, such as shopping centers and malls that have business-to-consumer (B2C) Facebook pages, Twitter feeds and blogs. The brokerage community has also found some traction with broker-to-broker and broker-to-client prospecting. Apart from those specific channels, it appears that the rest of the industry is still struggling to figure out the business value.

From conversations we've had with CIOs in the commercial real estate industry over the last few months, we found that sentiments about the value of social media in the commercial real estate business run the gamut from a Draconian 'we have no strategy and enforce 100% internal content filtering' to 'we're completely open, no filtering and you can do whatever you want' on the most liberal side.

In a recent interview, a CIO of a major REIT told us that their IT department tracked network utilization stats on social media sites for their 600+ employees. They found that on a rolling 30-day average over five million hits were registered just on Facebook, LinkedIn, Twitter and YouTube. The aggregated bandwidth used for just these sites was over 100GB. Discovering this kind of resource usage raises some immediate questions: "Are our employees chatting with their friends on Facebook or watching funniest dog videos on YouTube when they're supposed to be working?" or, "Are they sharing sensitive company information?" or, "Is any of that chatter a potential liability to us or our shareholders?" This is a natural reaction, but one that can be addressed through a comprehensive set of corporate social media policies and procedures (see below). But dealing with those issues first in the context of a social media policy is putting the cart before the horse. The real question to be asked is, "How can a social media policy help our organization meet its strategic business objectives?" and that's the question that I'd like to explore here.

When we started looking at business applications for social media several years ago, there were a few major contenders: Facebook, LinkedIn, YouTube, Twitter, IM platforms, a number of blogs, wikis, specialty collaboration platforms, and a number of sites dedicated to the commercial real estate industry such as CREOpoint, most notably. Now there are literally thousands of active social media websites. That universe includes 13 virtual communities with over 100 million members each. Of those, Facebook and Tencent QQ, the largest, have recently reached over 600 million members each ... twice the entire population of the United States.

Further, consider that the 600 million Gen-Ys and -Zs using Facebook today are going to be your employees and customers in the next decade. Their socialization and communication styles are very different than previous generations and it would be foolish to ignore that fact. Imagine how pervasive social media is going to be in 2020--perhaps three billion users? We need to learn to identify and create procedures and policies that help us harness and manage the power of this new media.

It's important to understand that there's definitely a right way and a wrong way to approach social media. The wrong way is the simplistic "We need to apply social media, let's create a Facebook page and put up a blog." It requires more thought than that to integrate, although you can easily pinpoint certain steps: (1) Define how you would like social media to support your strategic business objectives; (2) Determine how 'open' your organization is willing to be in order to reach those goals; (3) Put in the proper struc-

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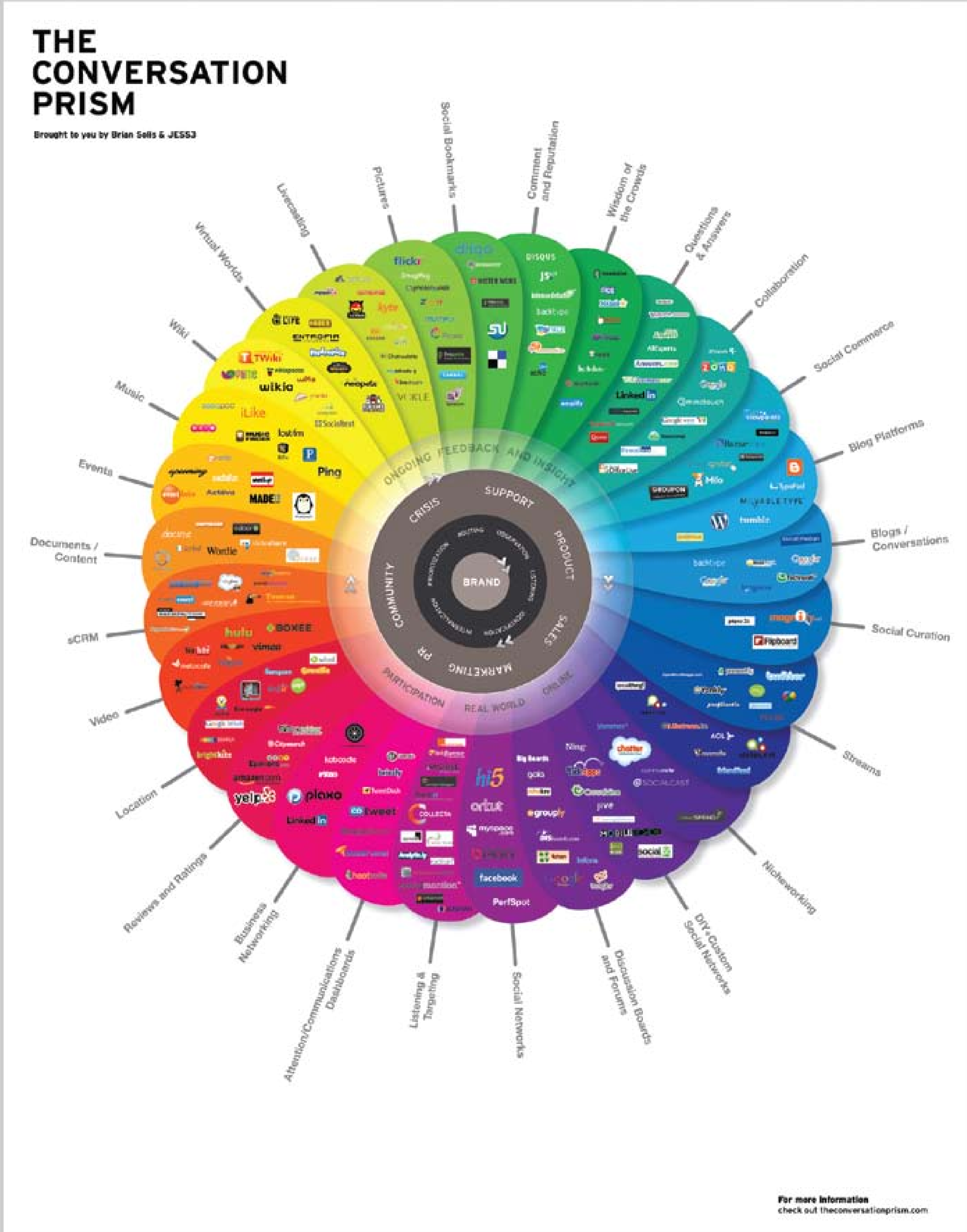
SOCIAL NETWORKING



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ture and controls; and (4) Use the proper listening tools and analytics to figure out where you are and to adjust course if necessary.

First, it's important to integrate any kind of social media strategy with your strategic business objectives. Whether your objective is to promote thought leadership or research, enhance customer service, attract more revenue, achieve greater awareness of who's buying in the sales process, generate leads from new sources, or to better find and retain talent, your social media strategy must have complete organizational alignment and that means confirmation and support from the C-suite.

> ***"… it is important to be more focused on quality rather than quantity in building our social media distribution network."***

By the way, I think it's a big mistake for companies to think they can use social media as a sales channel to promote their properties, products or services. The world is getting smarter and people are very sensitive to that kind of blatant hawking. Treating social media like advertising is the wrong approach. A better approach is to view it like opening a portal to find out what people are thinking and talking about, and using that information to more strategically position your company with long-term objectives.

Second, get used to the notion that you may need a more 'open' policy and that means putting a high degree of trust in your employees. Being open means encouraging employees to have frank, truthful conversations. If appropriate, this could include contractors, agents, and affiliates. The good news is that you will get feedback that will alert you to problems, both internal and external. Unfortunately, that's also the bad news; you may hear unpleasant things that may indicate deeper issues. But by proactively using social media as a sentiment indicator, you can start to identify and address these issues. It requires a higher form of organizational transparency though; truthfully, I think a lot of companies may not be willing to be that open.

Third, you have to define a program with clear objectives, rules, policies, procedures and governance to avoid chaos. Legal boilerplate can cover many aspects of that and is beyond the scope of this article. I did find a Social Media Policies and Procedures template from Jaffe Associates PR agency you may find helpful: www.jaffepr.com/sites/default/files/Social_media_policy.pdf.

Finally, you'll need the tools to properly listen to what's being said in the cloud. There are a number of tools available now that can help you cut through the chatter in the millions of possible social media sites worldwide and pick up tidbits of value. Check out PR 20/20's social media tool comparison chart: www.pr2020.com/files/PR_SM-Monitoring-Comparison.pdf.

There's a whole new area of social analytics being developed that goes way beyond just SEO or counting hits to web pages. Aggregate numbers of hits to a site are irrelevant now. Measuring factors such as awareness, attention and reach give us the comprehensive information we need. Number of conversations, share of conversations, and strength of referrals are some of the newer metrics. Take the example of improving customer service. Your help desk may help resolve the help ticket request but if there are ten simultaneous conversations on a blog referring to how frustrating it is to get through your call screening process, then you may be missing the forest for the trees. If the goal is to raise the bar on customer service and satisfaction, you'll want to know if those conversations are taking place. Also, if a particular campaign is providing referrals, you'll want to be able to measure the conversion rate of those referrals in order to measure the effectiveness of the campaign. Would you rather have one close from 100 referrals or two closes from 10 referrals?

Although we may still be a little ahead of the curve, I think it's important that commercial real estate companies start the process of thinking about and discussing their social media strategy. A few leaders and some best practices are emerging now and I think this is one area where having a sound, well-thought out strategy can pay off with healthy dividends in the future. •

ESI Headquarters: The Most Intelligent Building in the World?

"ESI's new state-of-the-art corporate headquarters—complete with fire extinguishers attached to and managed over the Internet!—is a showpiece of technology and innovation, designed to reduce operating costs and environmental impact."

Gateway West Sustainable I is the home of Environmental Systems Inc. (ESI), a building and facility system integrator headquartered in Brookfield, Wisconsin. Established in 1986, ESI provides solutions for control and automation, systems integration, security, life safety, advanced software applications, energy services and building operations. The new headquarters is a 34,100 square foot, Class A office building located in the Gateway West Commerce Center.

From the outset, the development team worked on ways to implement "Practical Sustainable Design" within the project. All sustainable design approaches were reviewed based on initial cost, return on investment, lifecycle cost, and innovation, with all carrying equal weight. The building strategy consisted of improving building performance to reduce operating costs, improve productivity, and generate a measurable return on investment.

ESI's "leading by example approach" of incorporating intelligent, integrated applications with a high performance mechanical and lighting system design and sustainable building elements, provides a working example of a building that has achieved a 41% energy efficiency improvement over baseline, as measured in real time. Its innovative practical applications of cutting-edge building technology and design serve as a teaching tool that enables visitors to visualize the difference sustainable design can bring to their own facilities, as well as demonstrates its overall profitability.

The Results

In addition to operating 41% more efficiently than baseline design (ASHRAE 90.1-2004), the building has also achieved an Energy Star rating of 98. While more than 10,000 square feet larger than their prior location, the utility costs are running 33% less. Water conserving fixtures yield a 37.1% annual water consumption savings, and all plantings are both native and climate tolerant, requiring no potable water.

"Considering the business impact of efficiency and sustainability efforts, I believe the interest in our new facility derives from executives wanting to understand how improved building performance reduces operating costs, improves productivity and generates a measureable return on investment," commented Paul Oswald, President, ESI Inc. Tridium's Niagara Framework was key to successfully integrating all the systems, equipment and devices in the building including:

Lighting

The system utilizes JACE Controllers with integrated I/O, outputting 0 to 10 V to adjust dimmable lighting ballasts, maintaining 20 foot candles of lighting based on ambient light sensors. Fluorescent task lighting is used for desk and workstation areas. Building occupancy from the access control system is used as part of the lighting control strategy, which is integrated with PowerLink circuit breaker panels from Schneider Electric for on/off control functions. If an employee enters the building during off hours, the access system recognizes who it is and where they are assigned so that only their task and egress lighting are enabled.

HVAC

Mechanical system capacity requirements were reduced due to the high performance building envelope design. This resulted in a reduction of over 300,000 btu/hr of heating and 14 tons of cooling. Heating is provided by a 750 MBH,

88% efficient hot water boiler utilizing hydronic baseboard heating and VAV boxes with reheat coils. The system also features a 5,000 cfm energy recovery unit. The HVAC equipment is located in the building to provide easy access for maintenance and keep the roof clear for solar arrays. The decision to use an air handling system, as opposed to the more common practice of using rooftop units, is an example of a design decision with higher initial costs, but one that provides a 159% ROI over the equipment life cycle. Controls for the HVAC system include a combination of LonTalk and BACnet controllers and are integrated with access and lighting control based on occupancy and comfort requirements.

Energy

Energy meters are connected via Modbus and separate metering is provided for HVAC, lighting and plug loads, as well as the overall building. Gas and water are also metered and connected to the Building Automation system.

Continuous Commissioning

Unless occupants complain about the temperature being overly hot or cold, systems in light commercial buildings are often forgotten and energy is wasted. ESI's systems are continuously monitored and employ fault detection, diagnostics, and advanced data analytics to notify operators if equipment is drifting out of proper operating parameters. The alerts/alarms are linked to Eagle Technology's Proteus computerized maintenance management system via BACnet to generate necessary work orders.

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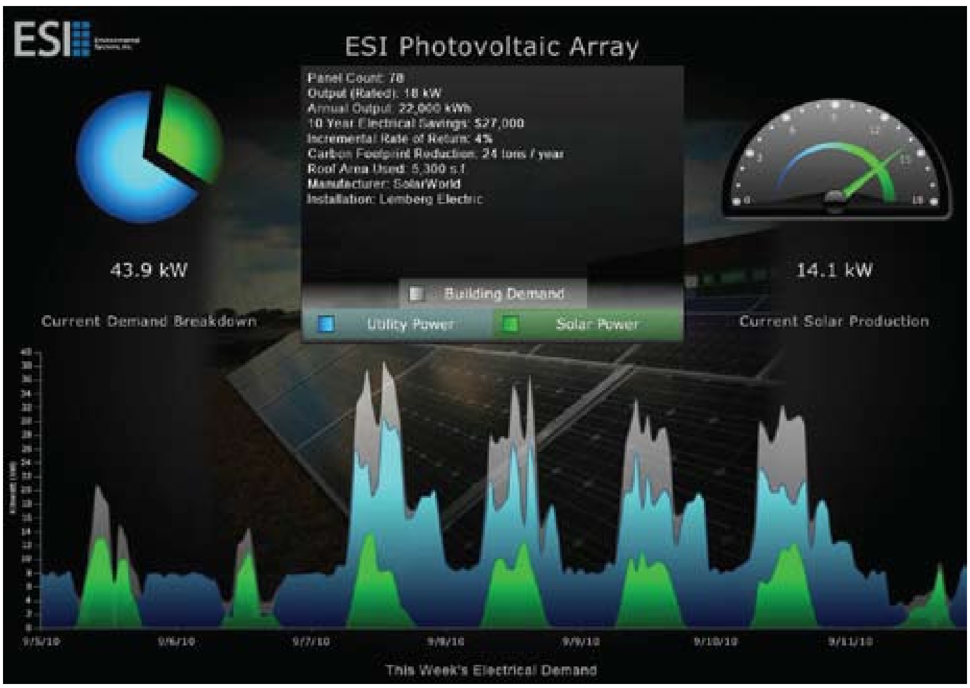
Security

In addition to access control, the building incorporates an intrusion detection system and eighteen cameras inside and outside the facility. These systems are integrated with the lighting and access control and in the event of an intrusion, lights, cameras and access controls operate according to a pre-defined sequence. Video history is stored for 30 days and video analytics are included for selected cameras.



Fire Monitoring & Alarm

The building features a fire alarm system connected via BACnet to the Building Automation System to monitor all initiation and annunciation devices that are part of the fire alarm system. In addition, the system monitors fire extinguishers for proper pressure and verifies that they are physically in place and are not obstructed. The fire alarm system is integrated with access control, security, lighting and digital signage to enable these various systems to take a predetermined course of action on a fire condition.

Audio-Visual Systems

In classrooms and conference rooms, the audio-visual systems are integrated with the lighting systems to provide "scene" control that works in concert with the occupancy and ambient light dimming controls. In addition, run-time on the projector lamps is monitored and work orders are generated based on the rated lamp life to ensure timely ordering of replacement lamps.

Information Display

The lobby features large flat-screen monitors displaying real-time information about the building's performance. Consumption and cost histories are displayed in dashboards that update in real-time and provide at-a-glance views of current performance compared to baseline.

Renewable Energy

In mid 2010, an 18 kw photo voltaic array was added as an educational tool to monitor the performance of the array and to understand the impact on overall building load. From a business perspective, this investment did not meet the company's criteria of a 10 year payback; however, the educational aspect of the investment, coupled with local utility incentives helped drive the decision. The array handles 8% of the building's load, and during daytime unoccupied hours, the building is producing more power than it is consuming, actually putting power back onto the grid. The PV array performance is measured in real-time and analytics were built to create a better understanding of the array's performance relative to time of day, time of year and weather conditions.

Next Steps

To ensure that this high level of performance is maintained, ESI is currently implementing the LEED EBOM process. This process, coupled with ESI's Building Performance Manager™ intelligent application platform, which integrates continuous commissioning, fault detection, optimization and work order management applications, will ensure employee comfort and keep the building performing at peak efficiency and at the lowest possible cost.

Summary

This building may very well be the smartest building on the planet from the standpoint of operational efficiency. All building systems were converged, including communications, control, security, life safety, audiovisual, and digital signage into a common building network that can generate and share data and enhance the efficiency and effectiveness of the structure. The unified operations system is designed to realize benefits such as operational continuity, energy-efficient performance, and occupant comfort and safety, while streamlining productivity and reducing operating costs and environmental impact.

The ESI Headquarters is truly an example of 21st Century innovation and a benchmark for our industry. As we continue to wrestle with a looming energy crisis, it is innovative ideas such as "connected" fire extinguishers that raise the bar for new technologies in real estate. These ideas will ultimately allow us to operate our facilities with more precision, creating properties that run more efficiently, conserve energy in ways never before imagined, provide for a safer environment for tenants, and produce more profitable assets. •

Real Estate Treasury Management

Maximizing the Financial Performance of Your 'Other' Assets

Tamir Shafer
Managing Director
NOI Strategies

Buildings aren't the only growth assets managed by commercial real estate companies. They manage cash. And lots of it.

The Real Estate treasury management function is in many ways a business within a business. And like any other asset, treasury should be proactively managed, properly forecasted, and readily adapted to market changes in order to maximize its financial performance.

The commercial real estate industry collects over $485 billion in rent and other income transactions per year in the U.S. alone. Combining outbound cash flows and inter-company cash movements, and then adding up the operating, reserve, security deposit, and investment account balances, you have an annual domestic real estate cash flow pool that easily tops $1 trillion.

With numbers like these, one might assume that the importance of treasury management is self-evident. But surprisingly few real estate companies have fully embraced their accompanying role as fiduciaries. For most, depositing rents, paying bills, and reconciling accounts defines the limit of their cash management responsibilities. Unfortunately, this results in most real estate companies simply forfeiting the upside inherent in their operating cash flows and liquidity.

Banks, on the other hand, fully recognize the power of real estate treasury and they have exploited the industry's oversight for decades. Banks love real estate companies for their large floating balances, consistent cash flows, and numerous fee-generating accounts. And they absolutely adore real estate operators for the huge spread they surrender each month.

This lost spread amounts to millions of dollars per year for many real estate companies.

Treasury management is comprised primarily of the following major components: debt management, daily cash management, cash forecasting, risk management, hedging and insurance management, investment management, spend management and banking relationship management. As with other business processes, optimizing and automating the transactional components of treasury offers considerable savings and efficiencies. But, in addition to improvements on the expense side of the P&L, aggregate liquidity and cash flow are powerful assets that can also deliver meaningful income.

How much of an impact can effective treasury management have on a real estate organization? At NOI Strategies, we have helped even medium sized real estate companies realize results into the millions of dollars annually. As rates inevitably rise, these companies are now on the leading edge, poised and ready to realize even greater benefits.

One Size Fits All (Except for Real Estate)

Managing real estate treasury is easier said than done. Compared to other industries, real estate generates a relatively low volume of cash management transactions, but its processing rules are highly complex. For example, huge collection operations such as American Express and Verizon will accept any of the millions of payments sent to them each month and deposit them into a single account. However, even a small real estate operator with a few hundred transactions is likely to have dozens of operating bank accounts used to make deposits—one for

Tamir Shafer is a Managing Director with NOI Strategies. Across a 17-year career, Tamir has managed the international treasury operations at investment banks such as Goldman Sachs, Barclays Capital, and Morgan Stanley, overseeing up to $250 billion of cash flow and related liquidity positions.

each property. And the number of exceptions is especially high. For example, they may have any number of reasons not to accept certain payments from tenants such as for those in legal, stipulation, bankruptcy, or if someone other than the leaseholder is attempting to make the payment. Further, non-full payments must then be applied to open line items (which can number in the dozens) the way the tenant intended.

Complexities like these render most cash management solutions ineffective for real estate companies. Thankfully, numerous banks and technology companies have built cash management solutions that are tailored for real estate, such as:

Remote Deposit Capture. These devices literally bring the bank branch into your office. Facilitated by "Check 21" legislation in 2003, payments are scanned into the RDC which sends the check or money order image directly to the bank for deposit. Daily trips to the branch are eliminated. So is the need for local accounts, as deposits can be made from anywhere into any bank. Most banks now offer RDCs. Some property management systems, such as Yardi's CHECKScan™, now offer RDC as an integral part of their application. RDC is best suited for on-site use at a property and for central offices with low volume.

Real Estate Lockbox Services. For higher volumes, there are several lockbox services that have been built specifically for real estate. Third party services such as those provided by Yardi COLLECT and KLIK Technologies have strong exceptions processing capability and integrate with all of the major property management systems. They are able to deposit payments into any bank, allowing for pricing based upon overall volume as opposed to the 'per bank account' model typically offered by banks. They also offer improved float capabilities, as they ensure funds are deposited into accounts faster.

Automated Payables. Several real estate-specific automated payables solutions emerged into prominence over the last decade. Solution providers include Nexus Payables, AvidXChange, Yardi PAYscan and PAYplus, Basware, and Realpage OpsTechnology. All of these eliminate the burden of the procure-to-pay process and open the doors to spend management and strategic sourcing initiatives.

Debt Management. Debt management solutions such as those provided by Resolve and Chatham Financial allow for centralized management of loan information, enhanced analytics, covenant tracking, and FAS-157 (debt mark to market) compliance.

Treasury Workstation (TWS). Real estate complexities and the large number of bank accounts play perfectly into the capabilities of a treasury workstation. Cash management, bank fees, debt issuances, coupon payments, financial investments and bank contracts across multiple banks can be managed using a single TWS interface, instead of multiple bank websites. In addition to facilitating transactions, a TWS can help to optimize liquidity by using data to forecast future cash flow requirements.

You Can't Just Set it and Forget It

All of these solutions serve to accelerate cash flow, maximize liquidity, improve operating efficiencies, enhance visibility, and reduce costs. Many business processes can be set to automatic once optimized. The opposite is true for treasury management. Volatility persists in banking regulations, fees, lending, international exchange, and other factors thus requiring constant analysis, planning, and tuning.

Treasury management is an especially complex and iterative practice that is particularly difficult for real estate companies to understand, much less master. It requires a variety of expert skills, specialized solutions, commitment, and fortitude.

But its potential is well worth it. With its bottom *and* top line upside, few areas have an impact on financials quite like treasury management. •

FASB/IASB and the New Value-Focused Corporate Real Estate Executive

Nancy Johnson Sanquist
Manhattan Software

Craig Gillespie
Manhattan Software

The proposed FASB/IASB changes to lease accounting policies and procedures will have an impact on a number of corporate business units including real estate, lease administration, finance/accounting, tax, information technology and human resources. The effect will be most profound in the real estate group because the lease values are the greatest in most organizations, particularly in the case of retail real estate. These changes will bring the CRE and CFO together in a way that our industry has not yet seen and make value creation a priority for our profession.

A CFO today is working in a more complex, strategic role which is focused keenly on the creation of value across the entire organization and directly accountable for the company's bottom line performance. As Michael Joroff (MIT) pointed out in 2008, real estate professionals who report to these CFOs have failed to understand how important their role can be to the finance and HR organizations. They have been focusing on protecting the value of their real estate investment, when they should also be creating value alongside their CFO. To accomplish this, they must align the real estate value proposition with that of the CFO. As seen in the chart (p.32), the CRE executive is positioned right on the same axis of the matrix as the CFO, with a strategic focus and a medium risk tolerance. The CRE contributes to the work of the CFO as they collaborate on:

- Strategic thinking and alignment
- Financial stewardship and discipline
- Focus on performance optimization

CRE executives have gotten increasingly sophisticated in aligning themselves with the "business of the business" as evidenced by a recent survey (CoreNet Global and Deloitte) which focused on strategy and its importance in mergers and acquisitions. CREs from over 80 companies (mostly financial services and telecoms) responded, with the following results: 65% revealed that they were "fully aligned while 28% were partially aligned with the broader corporate strategy." A slightly smaller group (59%) was actively involved in strategic business planning decisions. Therefore, CREs have never been in a better position of having an effect of creating value alongside their CFOs.

While this alignment is not a new phenomenon, the proposed changes in lease accounting are forcing a renewed focus on vision and strategy, excellence in execution, informed financial analysis and decision making. There has been a tremendous amount written on the joint proposal by IASB and FASB which will create a new model for lease accounting, where the rights and obligations for both existing and new leases will be capitalized on the balance sheet. This article describes how operating under these proposed changes will require a new or increased focus on value creation for the organization. It also focuses on why an Integrated Workplace Management System (IWMS) is required to be the central global repository for supply and demand data, strategy formation and performance excellence. Today, real estate strategy has become the new value creation imperative and IWMS is the tool to ensure this imperative can be delivered.

Strategies and Demand Flow Top Down

Strategic thinking focuses on finding and developing unique opportunities to create value by promoting a provocative and creative dialogue among people who can affect a company's direction. It is the basis for executing a strategic plan which identifies opportunities for the organization and challenges assumptions about the way things have been done. This allows for necessary adjustments as plans are projected into the un-

Manhattan Software is a global leader in enterprise real estate software and focuses on improving client performance in real estate and facilities around the world. Their integrated suite of products offers an advanced, web-based real estate lifecycle solution that readily integrates into any organization's existing infrastructure.

certain future. A corporation's strategies are based on driving economic forces, the competitive environment and plans for growth. These strategies are discussed and debated in the C-suite with the heads of the major organizational functions: Finance, Production, Marketing & Sales, IT, HR and CRM. Hopefully, CREs are also present in the room to understand first-hand the direction of the leadership group.

It's worthy to note that some of the most advanced CRE organizations embed customer relationship management (CRM) within each business unit to further understand the strategies of the departments so they can better forecast their future requirements and how that translates into space. It then falls on the CRE executive to take those strategies and build the strategy for the entire real estate portfolio. From this portfolio-wide strategy, the facility management function (including design and construction) creates the projects to execute the strategic direction.

Supply Side Data Flows Bottom Up

The CRE staff must gather all the necessary data to create the portfolio strategy. If there is already an Integrated Workplace Management System (IWMS) in place, it should be no problem to ensure data accuracy. This includes supply side data on all of the facilities in the portfolio; the most current, accurate information on occupancy, vacancy, amount of different types of space (e.g., office, labs, etc.); usage; market valuation; location of competition; total cost of occupancy (TCO); and historical performance. An IWMS should also include a general ledger (GL) with detailed data on accounts payable (AP) and receivable (AR). This provides the necessary detail to support all analysis necessary to interpret the existing financial conditions in a more comprehensive way than the higher level data stored in an ERP system.

Ideally, data is viewed graphically on a dashboard to show individual property performance, as well as collated to reveal dashboards on the entire portfolio. This data also includes real estate lease and ownership data including all terms, options, and critical dates. The supply side data can be viewed in reports, charts or in a geospatial visualization (i.e., map) for network analysis and pattern recognition.

Scenario Planning & Financial Discipline

Envisioning multiple scenario plans is a requirement now more than ever in CRE conference rooms, as they examine the existing game board and try to determine how it should look two and five years down the road in light of the new FASB/IASB requirements. Bob Cook has stated it most succinctly in his blog in July of this year:

"If you've been reading this blog … you're already aware about how the new lease accounting is going to have implications far beyond accounting … about how it's going to shine a huge spotlight on corporate real estate, force a rethinking of real estate strategies, and require creation of new processes, systems and careers."

These global accounting changes and increasing regulatory reform, along with the transparency demands of Sarbanes-Oxley and market-to-market valuation have all contributed to the increased interest in financial discipline as the CFO and CRE come into alignment. There is now a new requirement for understanding not only the accounting implications of a decision, but also the economic ramifications.

Therefore, the CRE executive will require their IWMS to have the capability to perform rigorous analysis on decisions to buy, lease, and dispose of properties as well as whether to sign up for short term or longer term leases. They will also assess the impact of renewals and purchase options on lease obligations. Many "what if" scenarios will have to be performed based on different conditions in the marketplace and in determining short or long term commitments. The IWMS must be capable of doing financial modeling on how each of these scenarios will affect an organization's balance sheet and P&L statement, including preparation of projections and pro formas, as well as assessing the impact on EBITDA.

The CRE must also decide what the accounting lease term is for each leased property. Which is the longest possible lease term that is more likely to occur? This is where probability analysis must be used in an IWMS strategic planning application. Also affected and worthy of consideration are financial calculations to determine the leasing effect on:

- Debt to Equity
- Interest Coverage
- Return on Assets
- Operating Margins
- Enterprise Value/EBITDA

After these financial analytics are completed and decisions made, the new projects are prioritized, scheduled and budgeted in an IWMS.

Performance Optimization

CRE executives need advanced IWMS dashboards to monitor the performance of the real estate portfolio, just as one monitors a stock portfolio. Ideally, these dashboards could either be pulled up in a 'war room' environment or on a laptop for each individual role.

In 2005 at a CRE conference in Dublin, Ireland, Karen Gibler and Anna-Lusa Lindholm presented a critical paper on the added value of CRE beyond cost and said: "Theory from finance and strategic management along with research on business performance, value measurement, and corporate real estate and facilities management can be used to develop key performance measures to evaluate how corporate real estate directly and indirectly adds value to the core business."

The two suggested that a real estate system be used and a CRE should tie the metrics reported via this system to the corporate strategies and operating decisions of the organization.

The real estate portfolio is not only monitored to determine the efficiency and effectiveness of operations, but once again, due to FASB/IASB changes, lease payments must be updated for each reporting period to include changes in projected contingencies. Therefore, a CRE in a retail organization must turn to an IWMS to perform various "what if" scenarios and determine the projected percentage rent for every store that is in the lease portfolio (which in some cases can be in the thousands). Projections can be made based on analog or similar stores, or on historical data, factoring in the current and projected economic conditions. In addition, lease payments for any type of building will have to be bifurcated in an IWMS Accounts Payable application where rent and service (Opex/CAM/Tax) components must be separated.

Conclusion

FASB/IASB changes are not expected to take effect until 2012-13. Now is the time to consider how your CRE operations can embrace the concept of value creation for your organization. Begin by investigating which IWMS vendor can provide the capabilities described in this article. Many organizations are moving from a computer-aided facility management (CAFM) system to IWMS, which is in general easier than moving from spreadsheets. In addition, we recommend you investigate the Strategy and Portfolio Planning (SPP) Community in CoreNet (spp.corenetglobal.org). In addition to keeping abreast of what is occurring with FASB/IASB, CoreNet SPP has eight task forces doing research on exactly what we recommend: enhancing the value creation capability of corporate real estate. •

Designing Building Operation Centers for the Future

Thomas Condon, RPA, FMA
Principal / Solutions Manager
System Development
Integration

"Modern BOCs and Security Command Centers have changed dramatically from their predecessors. Forget the image of a dark room with people huddled around monitors built into a monolithic console."

Professional buildings today are becoming more and more complex, consisting of advanced computer technologies, high capacity fiber optic networks, wireless communications, and advanced security systems. They are so complex that, from a technology viewpoint, they have more in common with a spacecraft than a building built in the 18th century. And like a spacecraft, today's complex buildings should be managed from a command and control environment.

Whether it is a Building Operations Center (BOC) or a Security Command Center, these environments provide information, access to critical systems, facilitate collaboration and communication between multiple groups, and serve as the nerve center for managing events and incidents. However, oddly enough, BOCs are not nearly as common in the United States as they in other countries. If you've been on one of the Realcomm NextGen Building tours, you know that in Asia and the Middle East, BOCs are commonplace in large buildings, and are considered to be a standard feature in newer ones. One reason for this is the relative youth of their commercial real estate portfolios; with a construction boom primarily in the last 25 years, their designers, owners, and managers have evolved from a different management and technology perspective.

But this is changing as the perspective of American architects, owners, and managers evolves, driven by a need to adapt to a changing marketplace, new technologies, and a more global awareness of the threats commercial real estate faces today. They now realize that BOCs provide an important capability for managing incidents. Today's tenants also expect the latest technology, and owners are finding that a BOC assures then the building is truly modern and prepared for anything.

Modern BOCs and Security Command Centers have changed dramatically from their predecessors. Forget the image of a dark room with people huddled around monitors built into a monolithic console. That was last century, when people were shackled to consoles because the only way they could interact with technology was through direct manipulation of buttons, dials, and switches. The rooms were dark because displays were not bright enough to be viewable in normal office lighting. Today, users interact with building technologies through computer interfaces, and this has changed the design of command and control environments; today they are sleek, bright, and appear more like conventional office environments.

The first change that you will notice is that consoles are no longer an absolute necessity, and many organizations are opting for more conventional office-style furniture options, which cost far less, and are far more adaptable. On a recent project, a client needed the ultimate flexibility of reconfiguring large sections of the command center very quickly to accommodate changing incident scenarios. We opted to use furniture that is designed to be reconfigured quickly (the desks even have wheels). In combination with floor-mounted power and data jacks spread throughout the room, the design allowed for positioning of staff in almost limitless configurations.

Another change is that computers are frequently nowhere to be seen in modern command centers because they are now mounted remotely in a data center, connected to users via keyboard, video, and mouse (KVM) extension systems. This is a preferable approach to the old method of a workstation computer in a console or under a desk, because in the data center, the computers are more secure, easier to service, and benefit from the controlled climate and air quality.

Regarding data centers, you WILL need dedicated technology space. Planning for technology should be a must, not an afterthought. Many architects or building owners may say they'll put 'all that IT stuff in a closet' and then later discover they are woefully short of suitable space. Every

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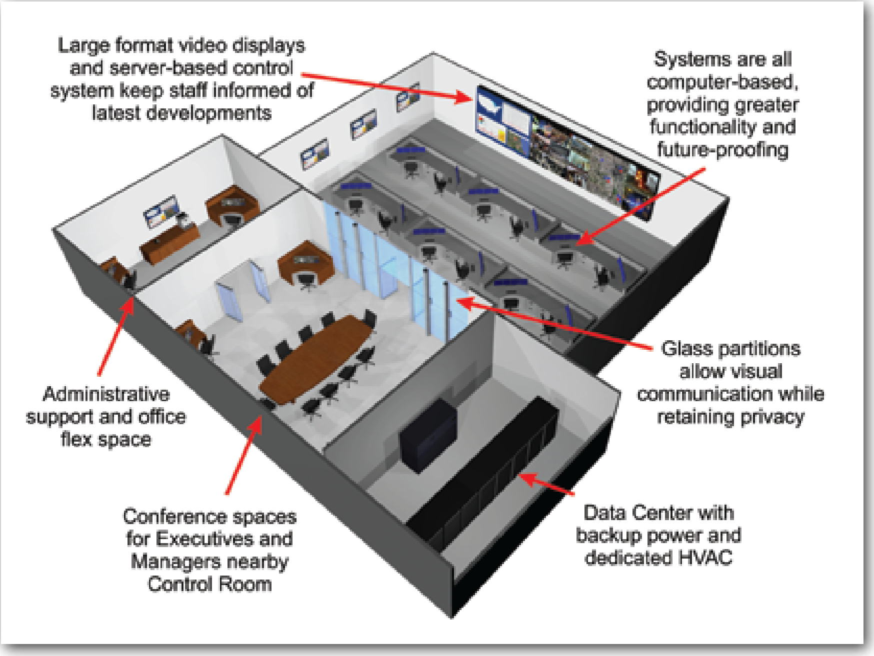
Tom Condon has been involved in the design of command and control facilities for commercial real estate, airports, convention centers, and government facilities for the past decade. He helped write the Transportation Security Administration's guidelines for airport command centers (to be released this year).



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major building system today runs on a computer platform, and technology is now a major component in buildings. If it is to perform as expected, a dedicated space with clean, backed-up power, a robust, dedicated HVAC system, and security are paramount. Consider consolidating all building IT systems into a single data center to take advantage of economies of scale.

Another major change is that today's command and control centers are far more focused on people and collaboration than in the past. More and more now have meeting spaces, and are located adjacent to management offices and conference rooms for convenient access. This new design is in stark contrast to prior command and control environments, where the focus was solely on technical operations or security, with little regard for human collaboration.

Collaboration becomes especially important during emergencies, when the ability to communicate quickly and effectively could mean the difference between life and death. During emergencies, the usage of the BOC will change; a critical factor to plan for at the design stage. There will be many more people involved; in addition to your staff, you could also have emergency responders, press, or others involved that ordinarily are not in the BOC, so planning for additional flex space to accommodate them is a must. It is a good idea to identify likely scenarios and then script them out, using input from your staff. Ask who would be involved in mitigating an incident, what they will be doing, what resources they will need, and with whom they will need to collaborate. This will allow you to predict the demands that will be placed on the facility during emergencies.

Large format video displays are now a huge part of command and control environments because most of the information monitored comes mainly from computers and video surveillance. One recent airport Operations Center project had a staggering 300 square feet of video displays on the walls, and each staff workstation had four 24" monitors. The number of displays and the actual placement required is more complicated than it might seem, requiring a thorough understanding of the functions of the individuals and groups, and what information they will need to access. Video control systems are also now computer-based, so you no longer need a dedicated control station for video; anyone with software and access can control the video displays from any computer in the BOC.

When adding new technology or building a new command facility remember that your processes, not just your technology, must also be re-engineered to fit the new environment. New technology changes the way people do their jobs. Careful planning before implementation will enable you to foresee and plan for the revision of standard operating procedures, change management, and training that will be required to fully utilize your new technology tools.

It is advisable to hire a consultant with experience designing command and control environments using the latest technologies, like digital video management systems and video display controllers, networks, mission critical infrastructure, and integration technologies like Physical Security Information Management (PSIM). If they have experience in these areas, you will know that they have experience in the technologies that differentiate a truly modern command center or BOC from their ancestors.

It is advisable to hire a consultant with experience designing command and control environments using the latest technologies and the ability to help you reengineer business processes. Qualified firms should have experience in digital video management systems and video display controllers, networks, mission critical infrastructure, and integration technologies like Physical Security Information Management (PSIM). They should also be knowledgeable in documenting and revising CONOPS (Concept of Operations) and SOPs (Standard Operating Procedures) to reduce disruption during transition and ensure optimal performance of the finished center. If your consultant has experience in these areas, you will know they have experience in the technologies that differentiate a truly modern command center or BOC from their ancestors. •

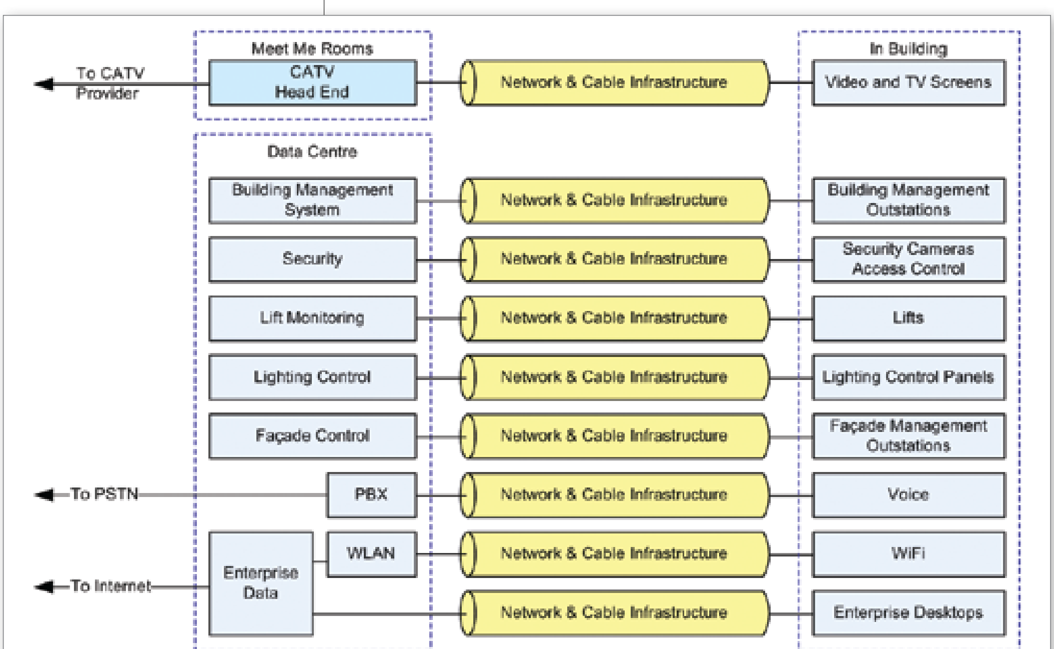
PON Technology Paves the Way for Cloud Networking

Anton Hofland MSc
CEO
2024Sight

As suggested by Moore's law, the rate of technology development since the mid-eighties has been exponential indeed and has led to ever faster enterprise desktops and Enterprise Access Networks (EAN). In today's IP-based EAN it is common to find gigabit networks connecting the enterprise desktops to the servers in the data center, using backbone cabling systems and enterprise-wide networking devices, which are powered up and cooled on a constant basis.

However, when analyzing the typical enterprise desktop from a usage perspective, one rarely finds a desktop that is heavily used. Typical usage generates CPU loads no higher than a few percent; i.e. the desktop is mostly idle. The same holds true for a network such as an EAN. The network load on an EAN is typically only a fraction of what a modern EAN is designed for. Even under comparatively rare circumstances, e.g. copying of large files to and from servers or HD television streaming, a typical desktop will only sustain network transfer rates of 50Mb/s. For a gigabit EAN, that represents only 5% of the available bandwidth. Hence, the EAN too is mostly idle.

Two additional factors adversely impact EAN utilization. First, EANs are designed to accommodate growth. Normally, an EAN has significant numbers of unused but powered up network ports, spare backbone bandwidth and spare cable infrastructure, awaiting utilization that may never come. Secondly, the increasing adoption of cloud computing technology in the enterprise leads to more applications being run on the cloud server infrastructure in the data center. Applications running in the cloud have a lesser EAN bandwidth requirement than their desktop counterparts.



Typical In-Building Segregated Network Infrastructure

Many modern building management and security systems use also EAN-style, internal IP-based networks, which are segregated to ensure unimpeded quality of service for the delivery of small amounts of time-sensitive data. The design paradigms for these networks are no different from the ones for EANs. It stands to reason that a modern development system has an increasing number of segregated and under-utilized networks, which are being implemented and operated at a great cost.

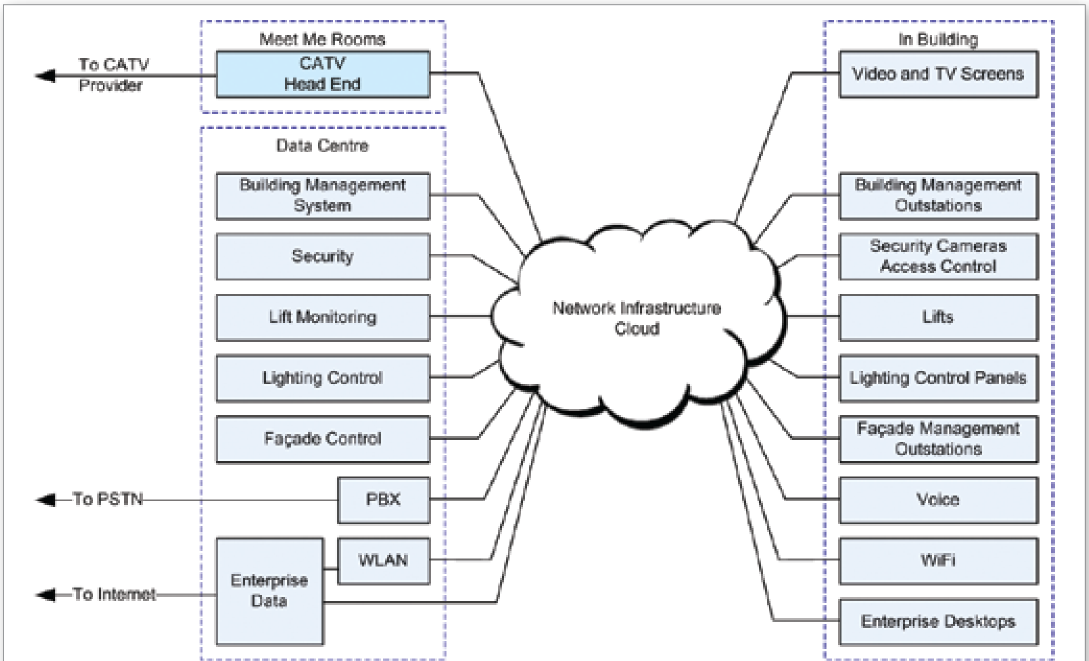
Virtualization Counters Under-Utilization

In computing, the response to under-utilization has been virtualization or 'cloud computing', where individual systems are consolidated on a single

2024Sight is a worldwide ICT consultancy based in Bahrain that specializes in the creation of Information and Communications Technology (ICT) Master Plans for Network Infrastructure Clouds. In addition to the above developments, 2024Sight staff has created the ICT master plan for the Bahrain Bay city development and worked on open access telecommunications infrastructure regulation.

system, thereby significantly reducing power, cooling, cabling and space requirements, as well as reducing capital and operational expenditure.

The Network Infrastructure Cloud (NIC) enables the virtualization of the growing collection of enterprise access and building management networks. A single, well-designed NIC implements a simplified networking infrastructure without sacrificing functionality or performance, while realizing the same virtualization benefits as cloud computing technology. The NIC does away with the rag-tag collection of routers, switches and cabling infrastructures that would otherwise have been necessary. Instead, the NIC on-demand provides virtualized network ports at the appropriate speeds and guaranteed service levels to any device in the entire development, regardless of whether the device is an enterprise desktop, a security camera or an outstation of the building management system.



In-Building Network Infrastructure Cloud

Prerequisites for the successful implementation of a NIC include the creation of a NIC design, which is based on a thorough analysis of the concept of operation of the development; supervision during design and implementation; and the availability of a suitable networking technology. The first two prerequisites can be met by engaging an ICT Master Planner during the very early design of the development and throughout implementation. The last prerequisite can be met by using the technology described below.

Utilizing Passive Optical Networking to Implement Network Infrastructure Clouds

Passive Optical Networking (PON) is a form of fiber optic technology that allows a large number of fiber optic end devices (up to 128 in some cases) to be connected concurrently to a single fiber strand over distances of up to 20 kilometers. Based on IEEE approved network virtualization standards, PON-based networks use virtualization techniques which enable the delivery of any virtual network to any connected device, regardless of whether it is an enterprise desktop, a security camera or a building management outstation. Furthermore, PON-based networks maintain network integrity and security by enforcing strict virtual network segregation. To ensure appropriate bandwidth availability, PON-based networks use powerful Quality of Service (QoS) techniques to manage guaranteed delivery of the right amount bandwidth to the right port at any time. Studies suggest that implementing a PON-based NIC would reduce the energy, cooling and space requirement by 70% to 80% when compared to a collection of traditional networks performing the same functions. PON technology is an excellent implementation candidate for a Network Infrastructure Cloud.

Network Infrastructure Clouds in Practice

Two buildings in Bahrain show that PON-based NICs are not just a theoretical possibility:

Riffa Views International School

A PON-based NIC has been installed in the Riffa Views International School. The NIC supports the classrooms' wireless network environment, the teachers' desktop and the telephone system and has enabled simplification of class room cabling and ducting design. Cloud-based thin client technology has been deployed for the students, thereby avoiding overloading the wireless network in the classrooms and improving the manageability of the school's systems. The NIC also supports the school's offices, public address

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system and bell system. If a traditional EAN architecture had been implemented, the design of the school would have necessitated construction of additional data risers to accommodate the network equipment. Because of the PON-based NIC, data risers were unnecessary and the space has been returned to the primary function of the school.

Arcapita Building

A PON-based NIC has been installed in the Arcapita Building, a landmark development on Bahrain Bay with a cantilever block construction, high entrance halls, and 150 meter long office floors.

The PON-based NIC carries concurrently all enterprise, wireless and voice data, and the data of the various building management and security systems. Adoption of the NIC has allowed minimal data risers per floor and simplification of data riser design, including the removal of screening provisions. The NIC has enabled the removal of specialized air-conditioning and separate cabling systems, achieving minimization of in-ceiling and under-floor tray systems. Under-floor structured cabling to the workplace has been replaced by fiber, thereby allowing for reduced raised floor heights without any risk of interference or service degradation. By replacing satellite television coaxial, the NIC is capable of concurrently distributing television signals without adversely impacting the available bandwidth. A very small number of fiber cables replaced all vertical copper in the building.

The NIC has encouraged servers and systems to be installed in

the building's data center, which in turn has simplified the integration of all building systems into a single Facilities Services and Management System (FSMS). Through its integrated workflow technology the FSMS automates facilities management and provides the building with the capability to optimize resource utilization and adapt to changing use over the coming years.

Summary

Sustainability and management of the environmental footprint are major issues for today's developments and enterprises. ICT Master Planned PON-based Network Infrastructure Clouds can improve sustainability of the installed technology through implementation of a single, adaptable, well-managed and well-utilized networking infrastructure, which is cost effective and energy-, cooling-, cable- and space-efficient without having to sacrifice any network functionality. •

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of high humidity and inform operators with a concise report organized by building, system name, etc. The same analytics rule can identify this condition across an entire portfolio of buildings or systems. Quickly identifying errant equipment operation due to malfunctioning components will result in improved energy performance.

Example 2: Energy Management—Automated Monitoring and Verification of Energy Performance

Establishing a desired baseline or target for energy consumption is a key part of most energy efficiency projects. Whether it is a lighting retrofit or replacement of HVAC equipment, we expect the project to result in a new, lower energy consumption profile for the facility. An important part of verifying the results of such a project is to track actual performance against this target. This is often done manually, requiring significant effort, but what if you had the ability to automatically compare energy consumption against the desired baseline and be informed of all of the periods of time when electrical or consumption went above the target?

> ***"The rapidly advancing field of analytics is the key to turning the data from our smart systems into actionable intelligence."***

This is an ideal application for analytics. Automated rules can constantly watch energy consumption, identifying periods of time that deviate from desired operation. Operators are automatically informed of the issue with a clear, understandable display showing just when and where deviations have been found. No hunting for data; no attempt to catch up on manual data analysis to meet reporting requirements. This type of analytics can provide a dramatic reduction in the effort required to track the results of energy retrofits and the ongoing performance of a facility.

Conclusion

With the progress made in building control systems and smart devices in recent years, we can now take advantage of the wealth of data they contain to truly understand and monitor the operations of our facilities and equipment systems. Analytics helps us understand and reduce energy use, highlight operational issues and improve overall facility operations, resulting in lower costs, greater occupant satisfaction and improved performance of our assets. •

Leveraging the Oracle Platform to Create Scale and Competitive Advantage

John Chung
Vice President, I.T.
Arcturus Realty Corporation

Arcturus is Canada's leading independent manager of third party real estate assets. We have a strong national presence managing over 34 million square feet of office, retail and industrial properties in both English and French. Our diverse client base includes financial services, pension funds, major retailers, public-sector and private investors. We provide a comprehensive menu of real estate services, including property and facility management, transaction management, technology & reporting, advisory services and transition management.

Use Case

Our most valued deliverable to our clients is a Monthly Management Report for their real estate assets. The management reports average 60-100 pages and include an executive summary, financial statements, variance analysis on budget to actual, leasing (sales), information and forecasting, occupancy statistics and stacking plans, cash flow, operational reports, etc. On a monthly basis, we deliver approximately 100 of these reports for the 34 Million Square Feet. Producing these reports requires collaboration between three key departments: Accounting, Leasing (Sales) and Property Management (Operations).

Like other organizations, we face many challenges in delivery of service because this business process traverses so many parts of the organization and spans across departments. To begin the legacy process, we first close off the monthly period for that property in our ERP (JD-Edwards EnterpriseOne). Each department then starts the tasks under their jurisdiction in their sections of the report. The accountants compile the financials and then send them to the property managers. The property managers and leasing group give the accountants information that feeds into the financials. Often, a vacillation of communication and data occurs because of missed accruals, discrepancy of numbers, missed assumptions, etc. Many times when a change is made, the accountants must rerun the financial statements and manually send to the property manager via email. Upon approval of the draft financials, the property manager then re-enters information from the financial data into Word and Excel templates, adding text comments and additional reports where required. The entire report is then manually arranged in sections and converted into one PDF formatted document, including the actual JDE financial reports. Finally, the report is e-mailed to the client and/or posted on an online report repository.

Challenges During the Process

Lack of Scalability/Inefficiency—The legacy business process was slow, manual and required a lot of hours. The only option to scale and grow the business was to add more and more people to deliver the reports.

Inconsistent Report Quality/Accuracy—Manually re-keying of data between systems and templates and multiple sources of data inevitably results in human error and more layers to ensure accurate information.

Lack of Visibility—Because the reports were pulled together manually, it was difficult to accurately track status of the process and to identify and rectify issues for timely delivery.

Collaboration Issues—Cross departmental workflow and differing priorities between groups led to stress and "finger pointing." Group accountability beyond one's own task was also an issue because there wasn't a cohesive orchestration of the process.

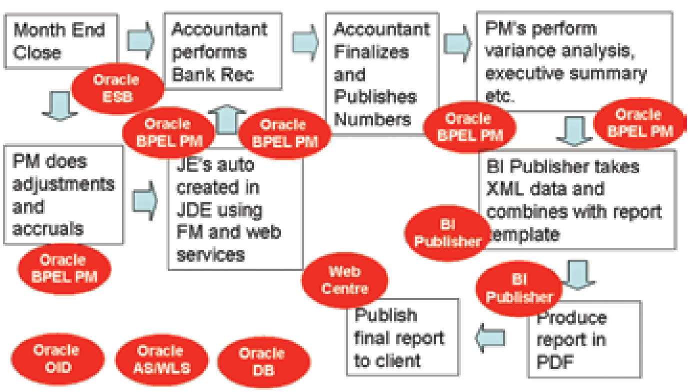
Lack of Standardization/Consistency—The reality of our business is that we have many different clients with very different reporting requirements. Often, the process itself was customized to deliver the required information and reporting.

John Chung is responsible for all aspects of Arcturus' I.T. department. He has over 13 years' experience in the real estate industry with diversified knowledge in technology and programming covering a broad range of languages and environments.

Solution

The challenges with the method of operation, and in particular the individual client requirements, resulted in a very complex process that put stress on our organization and employees. To address this issue, our solution was to leverage the existing technology infrastructure. To begin, we made a strategic decision to reposition our JDE platform to be more open, 'cloud' ready and to reduce the number of customizations to JDE's core objects to less than 10. We accomplished this by upgrading to the most current version of JDE and replacing the underlying infrastructure to use Oracle Database 10g, Oracle Application Server 10g and Oracle Linux/VM. This allowed us to use the new and improved functionality of the JDE E1 9.0, naturally eliminate customizations and lower the total cost of ownership on maintenance and future upgrades. Further, it enabled open standards for integration through web services. The final piece of the puzzle was to use Oracle's Fusion Middleware platform to extend JDE by automating, orchestrating and providing a structured workflow for our monthly management report process.

The following diagram illustrates the process at a high level, layering in the various components of the Fusion Middleware technology stack.



Measurable Return on Investment

- Data "auto population" resulted in a 50% reduction in time and effort (per property report, depending on size of report) required by property manager to compile and transpose data into report.
- Improved accounting approval workflow by 65%
- Saved running an average of 7 reports per property on JDE (4200 reports/month!)
- 100% reduction in report collation and generation process, reduced completely by automation of function using fusion middleware tools.
- Total report cycle (per report) reduced by 40%
- Estimated ROI achieved in less than 2 months!

A Look at the Future

Following the huge success of this project, we have plans to leverage the platform to address other business processes and challenges, such as budgeting, leasing, deal flow, etc. We also plan to look at cloud computing to develop additional solutions to help us reduce costs and increase efficiency. •

Establishing a Foundation for Application Integration and Interoperability

Chris Lees
Executive Director
Calvis

Given today's economic climate, efficiency is the name of the game. But the goal of achieving efficiency often exposes a gap between best practice (often characterized by standardized processes) and efficiency (the real-terms savings of time and money).

To achieve maximum efficiency, companies are realizing that their solution infrastructure—the technological platform on which business solutions can be delivered—needs to be adaptable. This infrastructure includes not only the physical (or increasingly virtual) infrastructure, but also the applications that sit on top and the inter-play and integrations between them.

It is very easy, and therefore tempting, to work backwards from our "best practice" standard business processes when constructing a solution infrastructure. We can take any one of these processes—whether from accounts payable processing, performing an appraisal, acquisitions or any one of the numerous business activities that comprise our industry—and look for opportunities to automate. We can take products from the market that support our process and implement them. This is a repeatable process throughout our enterprise and one that many of us will be familiar with.

This approach is common, and grew out of the large consulting practices in days when every IT project was unique and entirely custom-made. However, this way of thinking about the opportunity is only one of many approaches. In fact, many of the efficiency benefits that automation offers in a specific business process often overlap with others, as they rely on a set of common technological innovations. These include:

- Web-enablement
- Workflow/task management, forms and integration with other business applications
- Reporting and business intelligence
- Collaboration tools to share ideas and work together
- Document and content management
- Search

So if a solution infrastructure is built back from the business process and includes product to deliver the automation, there is a high likelihood that the resulting products will each have their own version of these common technologies. We have all seen this—users struggling with document management in multiple applications, each doing it in a slightly different way; reporting tools that vary from product to product; and truly unifed search merely a pipe dream for many companies.

Having created this mix of technologies, very often it is too late to backtrack and take another approach, and so we end up investing in ever more complex technologies to bridge these systems.

In some cases we can replace part of a product's functionality (that we have paid for) with another, more widely used version—for example using some common workflow technology in place of that delivered with our various products. However, that involves more licenses, more time, and often a hefty customization bill from the company implementing changes.

In other cases, we are back to 1960s software development: customizing every component to twist and bend iat into a shared vision of the infrastructure. Again, frightening amounts of money and time go by in the attempt.

Unfortunately, the end result is then so heavily customized, it becomes impossible to upgrade. Upgrading any individual product would be hard

Chris Lees is Executive Director of Calvis, an information technology and management consultancy focused on the European and U.S. real estate sector. Calvis offers its clients technical services for SharePoint, property/asset management selection and implementation, and business intelligence, together with CIO advisory and technology assessment and strategy development.

enough with the intricate customization, but in the network of interoperating products the risks of bringing down significant areas of the business make the task inconceivable in most circumstances. So, when our business needs change, we often face a major problem.

This is quite clearly not an adaptable solution infrastructure.

To achieve something that provides more agility and responsiveness to business needs, we need to look at the challenge of automation in a different way.

Instead of considering each business process or group of processes in isolation, we must take a wider perspective and make platform choices in respect of these common technologies. In the same way that it would be unusual to allow each user or team to choose which operating system or laptop vendor they wanted, so these common technologies can be pre-selected.

Then, as products are selected to meet the business process needs, they can also be selected for out-of-the-box compatibility with our chosen common technologies. This potentially reduces the choice, and there is a legitimate argument about whether the compromises required by including this in the selection overall have a bigger negative impact than the problems articulated above.

However, what has changed the parameters is the arrival of—or more accurately raised the game by—sophisticated platforms offering these common technologies at low or no cost. The most prevalent of these is Microsoft's SharePoint platform, which delivers all of the common technologies referred to above in a very open and easily integrated suite. This makes it simple for vendors to support these technologies and even include many of them in their own product, as the entry level version of SharePoint is free.

But most importantly, it means specific or specialized real estate business processes can be implemented in products that quite literally plug-and-play with these common technologies, providing the end user with a harmonious experience as they move between their day-to-day business applications. In productivity terms—and hence efficiency—this alone has a huge impact.

We have picked out SharePoint as an example platform technology that supports this alternative approach. We have deployed solutions built quickly on this platform in a number of areas, including:

- Acquisitions—by using SharePoint's sophisticated and easily set up Business Connectivity Services to access other systems' databases, it is easy to integrate existing property management, CRM and market data into an intuitive acquisition management application that incorporates flexible reporting using the BI tools in SharePoint and SQL 2008 R2, and SharePoint's workflow capabilities.
- Client Reporting Extranets—by exploiting SQL 2008 R2 business intelligence capabilities to report on data held in a property management system, and using SharePoint's publishing and content management capabilities, it is quick and easy to provide clients with a single place to access predefined reports (in PDF format) and dynamic, interactive reporting, exploiting Excel services and PowerPivot to provide on-the-fly slicing and dicing of property management and appraisal data.
- Property Management Visualization—using Visio to map data from property management databases onto building floor plans (imported from AutoCAD), it is easy to publish plans colored or annotated with live tenant data—whether that is lease expiration, vacancy, rent per square foot or any of dozens of other measures.

SharePoint is certainly not the only kind of platform technology that can be thought of as providing common technologies to support a wide range of business processes. Given the financial nature of real estate investment, appropriate financial systems can also provide common technologies (more on that later); likewise, making the most of other widespread technologies like Microsoft Office 2010 and Microsoft SQL Server.

The key is not to start at one place—the business process—and then simply work outwards overcoming all obstacles at whatever monetary or time cost. We need to be smarter, and pick low cost, easily implemented, but powerful platform technologies that can support our business applications and make our users faster and able to make better decisions. •

PROCESS MAKES PERFECT.

The Standardized Industry Framework for Real Estate Business Processes

Glenn P. Murray
Executive Director
NOI Strategies

If you think your operating challenges are your own, I can assure you that they are not. At NOI Strategies, our vantage point as consultants to so many of the world's largest real estate owners, operators, and investors allows us to see overwhelming commonality inherent in the day-to-day issues that our customers often consider unique to their organizations.

The fact is that 95% of the operational issues our customers and their constituents face are common to every real estate company. Sadly, the inverse truth is that considerably less than 5% of this burden is addressed by the industry in a shared fashion.

Close your eyes for a moment and think of it this way…Imagine you are in the airline industry. In your imaginary world every airline operates its own airports, devises its own navigation systems, and uses crash avoidance systems that detect only the planes it owns. There is no common infrastructure. Critical maintenance data, flight routes, and passenger security profiles are not documented. Reservations and other key information are kept in spreadsheets or systems that don't talk to one another. Nothing is shared. Maintenance, controls, and reporting standards are as good as what airlines decide may be right for themselves. Lessons are learned from airline to airline only in the most extreme cases.

Now imagine you are a customer of one of those airlines. The user experience is not only cumbersome and disjointed, but also downright dangerous. Finally, imagine you are an investor or a lender specializing in airlines. Your single version of the truth is as good as the limited data you can decipher. Planes could be operating perfectly, or they could be ready to fall out of the sky. It is hard to tell. You'll have to pore through reports to discover that kind of information.

Meanwhile conclude that you should establish your own process for dealing with the high probability of planes falling out of the sky. When it comes to forecasting the value of your investments, your airlines each make up their own assumptions using different systems. Your job is to aggregate it all each month and try to make sense out of it. Yet no matter how hard you try, it is impossible to verify how one airline operates as compared to another.

If you got this far along with your eyes closed please open them now. Does this scenario seem eerily familiar? In many ways, this absurd example is exactly how the real estate industry operates today. Disconnected. Devoid of standards. Closed. If there was ever an industry in need of an open, shared operating methodology, it is real estate. And if there was ever a time, it is now.

New Gains New Pains

The recent (is it over yet?) economic crisis forced companies to look under every rock to find savings and efficiencies. This spurred a shift away from systems that were little more than data entry systems toward process-savvy solutions that help users to perform their daily jobs more efficiently and effectively. By doing so, these solutions converted non-core but essential functions from a cost of doing business to no-brainer value

During more than 20 years in the real estate industry, Glenn Murray has launched and led a multitude of successful businesses and business transformations and has developed productive relationships with many of the most recognized names in the industry. Glenn has extensive experience in property management, business process outsourcing, financial processing, treasury management, cash management, and information systems.

propositions. The industry as a whole is saving tens of millions of dollars per month as a result of simply focusing on automating seemingly ordinary business processes, such as accounts payable and cash receipts.

The resulting fulcrum shift allowed companies to do more with less people, but saddled them with even more point solutions that don't talk to one another. And suddenly, investors and lenders are no longer passive when it comes to ensuring that real estate firms can reliably meet financial performance expectations. They are becoming more and more a part of your process and you a part of theirs. Orchestrating all of these parties and all of these moving parts requires even more controls, adds additional risks, and further clouds transparency.

Introducing 'Process Makes Perfect'

'Process Makes Perfect' combines standardized real estate business processes with business process management technology. For the first time ever, real estate companies are able to control all of their business processes under a single, holistic discipline. It takes the 95% of those processes that are common to every real estate company and pre-packages them into an operating environment that you can implement yourself or buy as a shared service. The remaining 5% can be tailored exactly as required to fit your business. 'Process Makes Perfect' is based upon an integrated, centrally managed, and workflow-enabled business process management technology framework that facilitates and governs the exchange of enterprise information throughout a company's ecosystem of employees, customers, partners, applications, and databases.

It is comprised of a virtual library of every single real estate process pre-packaged for you to select, customize, and implement across your organization as your business needs dictate. Some diverse examples would include Month End Close, Bankruptcies, Disputes, CAM audits, Vouchers and Lease up. Every process you can think of, optimized for real estate, standardized, documented, and ready for production.

One by one, companies that implement 'Process Makes Perfect' can corral the rogue, spreadsheet driven processes that are peppered throughout an organization. Policies that were once subject to discretion can now be enforced by centrally defined rules that galvanize timeliness and escalate exceptions. Individual processes can be tracked for detailed analysis of cycle time, exception rate, and productivity.

'Process Makes Perfect' will convert a disjointed, inefficient industry into one that is highly collaborative, rules-based, auditable, and standardized.

So where do you begin? One process at a time. •

Is Building Wireless Keeping Pace with the Mobile Revolution?

Kelley Carr
President
Custom Solutions Group
Cellular Specialties, Inc.

Cellular coverage has always been an interesting subject within the Commercial Real Estate Market. Thirteen years ago the relationship between the Real Estate industry and the Wireless Service Providers (WSPs) could best be described as the Clash of the Titans. Each group thought that the other should cover the costs of deploying a Distributed Antenna System (DAS) inside buildings to allow for cellular coverage and there was no negotiation considered by either party.

As cell phone usage began to grow and business professionals began to demand voice and high-speed wireless connectivity "anytime, anywhere," the two sides began to cooperate. The WSPs were looking for new opportunities to enhance coverage and the real estate industry needed a competitive edge to retain and acquire clients.

"The 4G technologies the carriers are now bringing to market require an extensive set of requirements from a design perspective to ensure maximum user experience and avoid network issues that could arise for the WSP."

Flash forward to today: over 75% of phone calls are originated indoors and cell phone usage is expected by today's consumer everywhere, all the time. The ability to make 911 calls is critical for safety, liability, and public relations. Clients are demanding coverage in their space, and the proliferation of the iPhone means that coverage must be expanded. Meanwhile, the WSPs are looking for opportunities to alleviate capacity off of their macro-networks. These innovations have forced collaboration between the Commercial Real Estate industry and the WSPs, causing them to move away from their uneasy alliance and find creative ways to finance the deployment of DAS solutions.

In the past, the primary reason for deploying a DAS was to provide coverage. Today, the primary reason for deploying a DAS from the WSP perspective is capacity. In many cases, the user is not looking to make a call, but to download information, watch videos, navigate/find directions, send an e-mail or text, snap a photo, or social network with their friends and colleagues. The cell phone is no longer a cell phone, it is a mobile device that supports many applications for business, social, and personal functions. All these applications require more bandwidth, which is very valuable to the WSPs.

The Commercial Real Estate Community is one of the most technologically advanced market segments in the world. Its members are constantly looking for new ways to achieve cost savings, efficiency, revenue, and to attract and retain premier clients. Wireless has played a key role for the industry in the past, but is becoming more and more prevalent, not only for in-house use, but also as a service for clients. Before a cli-

Kelley Carr is a co-founder of Cellular Specialties, Inc. (CSI), a leading provider of building wireless solutions. With over 15 years of experience in the wireless industry, his expertise has led to countless speaking engagements and panel participations at trade and industry events. He also participates as a board member for the industry s leading in-building wireless associations.

ent initiates a new contract or extends an existing agreement, they are demanding that wireless coverage be available in their space for the WSPs, WiFi, and Public Safety. What used to be additional service is now expected as a matter of course.

Public Safety is also driving the need for DAS deployments. New ordinances have been introduced into the NFPA and IFC that require Public Safety Cover in a building with back up redundancy. In most cities and counties a fire inspection will not pass unless there is coverage for the local first responders and this trend will continue to grow. From a funding perspective, it has been proven that a facility with coverage for all of the WSPs and Public Safety will receive discounts on insurance premiums.

For some of the public venues and premier properties where there is a lot of foot traffic, the WSPs have provided funding for a multi-technology DAS solution that supports all of the WSPs, WiFi, and Public Safety. With these projects you need to be prepared to give up some, if not all, of the control of the system. Alternatively, for other properties, owners have committed the funding to deploy the solution and have been able to recoup their costs by charging the WSPs to participate on the DAS. This allows the venue to maintain control of the system and look for other methods to drive revenue.

As organizations look to deploy these solutions within their facility, it is critical that you are working with a company that has relationships with the WSPs on both a local and national level. A company that is approved to provide turnkey solutions by the WSPs, and has experience within your city, is one of the key ways to ensure an expeditious and cost-effective solution. They must also have WLAN certifications and be familiar with your local first responder ordinances if you are considering WiFi and Public Safety. Any company may claim to have experience at installing these systems. Verifying that your partnering firm goes through the local WSP process will avoid problems and assure a smooth transition. The 4G technologies the carriers are now bringing to market require an extensive set of requirements from a design perspective to ensure maximum user experience and avoid network issues that could arise for the WSP.

It is becoming ever more important for your customers, tenants and employees to be able to access wireless voice and data seamlessly wherever they may be. Wireless voice and high-speed data on-demand is expected and necessary in today's business world. Now is the time for the Commercial Real Estate Market to be proactive in reaching out to organizations that can support them in working with the WSPs to upgrade their buildings to include multi-technology DAS solutions. There are funding vehicles that have been proven to work to drive new opportunities for the building management and ownership groups through technology initiatives and in many cases, wireless = technology. •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		Sloan Sloan is an industry leading commercial plumbing company dedicated to developing innovative solutions for saving water in domestic and international markets.	Richard Nortier Product Manager 847-233-6338 -p rick.nortier@sloanvalve.com
	•	**Yardi Systems, Inc.** Yardi Systems has been committed to the design, development, and support of real estate investment management and property management software for more than 28 years	Brad Setser Vice President 800-866-1144 -p brad.setser@yardi.com

Consulting Services

		AvidXchange, Inc. Automate AP with AvidInvoice, the industry-leading SAS 70 certified workflow solution to increase visibility to pending invoices and improve cash flow forecasting.	Tom Spencer SVP, Sales & Marketing 704.971.8114 -p tspencer@avidxchange.com
	•	**Calvis** IT & management consultancy focused on the European & US real estate sector offering strategic and technical services for SharePoint, property/asset management & BI.	Maciek Janowski Director of Sales and Strategic Marketing 855-422-5847 -p info@calvis.com
		Intelligent Buildings Intelligent Buildings provides strategic consulting for stakeholders, owners and property managers in commercial, institutional, government and corporate real estate.	Tom Shircliff Partner 704-759-2710 -p tom@intelligentbuildings.com
		NOI Strategies, LLC. NOI Strategies delivers business process optimization, technology consulting, and outsourcing services that maximize property, portfolio, and corporate performance.	Glenn Murray Executive Director 516-280-5822 -p glenn.murray@noistrategies.com
		REdirect Consulting A provider of consulting solutions including systems selection, implementation, customization, conversion and support for leading applications including MRI and Yardi.	Faraz Memon Principal (212) 220-8601 -p faraz@redirectinc.com

Real Estate

		Angus Systems Group Angus Systems is Setting the Standard by working for more than 1.2 billion square feet of commercial real estate across North America.	Todd French Vice President, Business Development 1-877-442-6487 -p sales@angus-systems.com
		Business Integration Group, Inc (BIG) BigCenter provides a scalable and cost effective Integrated Workplace Management Solution (IWMS) that delivers strategic insight for clients.	Simon Davis Senior Managing Director, Client Solutions 888-288-8706 -p simon.davis@bigcenter.com
		Lucernex Technologies IWMS, Lease Administration and Lease Analysis Software for Corporate and Commercial Real Estate.	Joe Valeri President 972-468-0494 -p sales@lucernex.com
		MRI Software, LLC MRI Software offers business management solutions to the global property management and corporate real estate industries.	Abigail Plumb-Larrick Marketing Manager 800-321-8770 -p abigail.plumb-larrick@mrisoftware.com

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Real Estate

		Qube Global Software Qube Global Software provides proven yet innovative software applications that excite the professional real estate user.	Matthew Sheldrick VP Business Development 610.431.9080 -p msheldrick@qubeglobal.com
		Sloan Street Advisors, Inc. / ITRA Sloan Street Advisors/ITRA provides transactional representation, brokerage and consulting services exclusively for corporate tenants and buyers worldwide.	Debra Stracke Anderson CCIM, SIOR President and CEO (703) 758-7479 -p debrasa@sloanstreetadvisors.com

Telecom / Wireless

		ExteNet Systems, Inc. ExteNet Systems, Inc. designs, builds and operates distributed antenna networks for indoor and outdoor wireless connectivity solutions and services.	Linda Shepelak Executive Sales Support 630-505-3854 -p lshepelak@extenetsystems.com
		M5 M5 is a managed hosted business VoIP phone system provider.	Sandi Smith Manager, Events and Channel Marketing 646-747-1641 -p ssmith@m5net.com
		Montgomery Technologies We are the technology manager for some of the nation's premier office building owners. We work with landlords nationally to ensure that building technology meets their current and future needs.	Greg Jones President 866-824-8362 -p gjones@montgomerytech.net
	•	**Panduit** Panduit provides structured cabling solutions for commercial properties	Darryl Benson Solutions Development Manager 708-532-1800 -p dsb@panduit.com
		SOLiD TECHNOLOGIES USA SOLiD's Distributed Antenna System (DAS) is built especially for building owners. Cellular, Public Safety, and 2-way Radio over a single fiber in a code-compliant enclosure.	Ken Sandfeld VP Sales 761-271-1838 -p seth.buechley@solidtechusa.com

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3rd Annual Realcomm Energy Innovation Summit

IT'S EXPANDING ROLE IN THE FUTURE OF FACILITY MANAGEMENT AND SUSTAINABILITY

Jim Young
Realcomm

Robert Peck
GSA/PBS

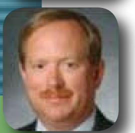
Larry Melton
GSA/PBS

Phil Klokis
GSA/PBS

Don Goldstein
CB Richard Ellis

David Pogue
CB Richard Ellis

Dan Probst
Jones Lang LaSalle



David Johnson
Jones Lang LaSalle

June 15, 2011

9:00 AM – 10:30 AM

PEABODY HOTEL, FLORIDA

This year's Annual Energy Innovation Summit will feature two distinct segments showcasing GSA/PBS leadership and IT/ Sustainability executives from CB Richard Ellis and Jones Lang LaSalle.

The first Summit panel discussion, titled **"IT's Expanding Role in the Future of Facilities Management,"** will include Robert Peck, Commissioner for Public Buildings Service for the U.S. General Services Administration, Larry Melton, Assistant Commissioner, Office of Facilities Management and Services Programs for PBS and Phil Klokis, Chief Information Officer for PBS, who will discuss the historic shift in the way the industry designs, builds, manages and operates commercial, institutional and corporate real estate.

The second discussion, titled **"IT's Role in a Real Estate Firm's Sustainability Strategy,"** will feature the technology and sustainability teams from two of the world's most prestigious commercial real estate firms. Don Goldstein, CIO and David Pogue, National Director of Sustainability from CB Richard Ellis will be joined by Dan Probst, Chairman, Energy and Sustainability Services and David Johnson, CIO from Jones Lang LaSalle. These two world-class organizations will offer insight, perspective and experience into the evolving relationship between technology, automation, innovation and sustainability.

FOR MORE INFORMATION, INCLUDING REGISTRATION, PLEASE VISIT WWW.REALCOMM.COM/ORLANDO.HTM