

# Realcomm *EDGE*

@ the Intersection of Commercial/Corporate Real Estate and Technology  
May 2013



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**BONUS!** 2013 Solutions Marketplace Directory

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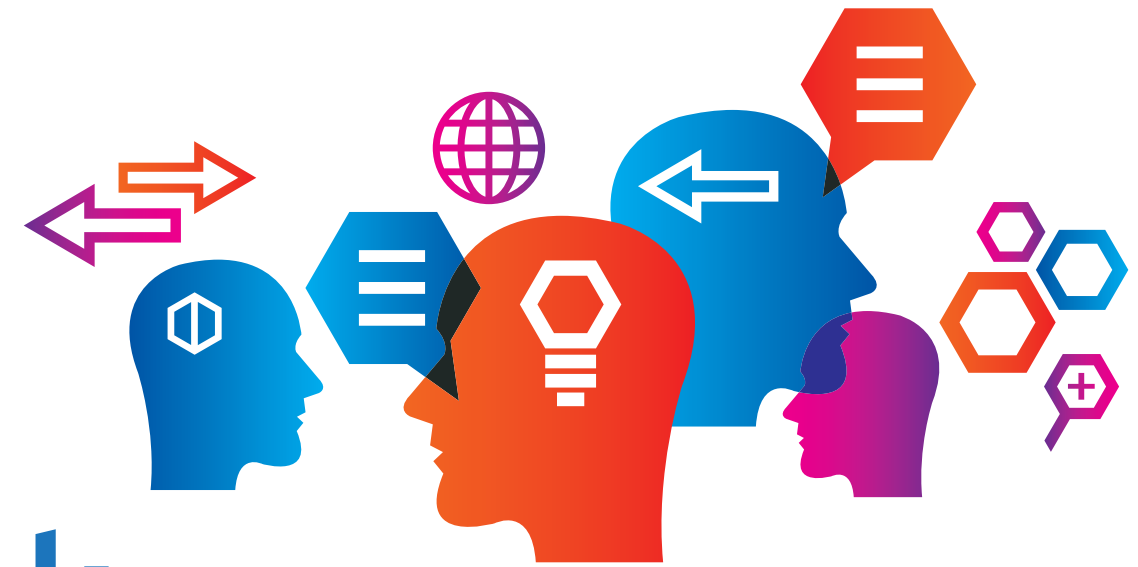
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A publication of The Realcomm Conference Group, LLC  
3951 Park Drive, Carlsbad, CA 92008  
[www.realcomm.com](http://www.realcomm.com)

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Publisher: James Young, Founder and CEO

Managing Editor: Nancy Stone | [nstone@realcomm.com](mailto:nstone@realcomm.com)

Graphic Design: Jamieson Media

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## Embracing the Real Estate Technology REvolution



**Jim Young**  
Founder and CEO  
Realcomm Conference Group

*"The old ways of doing business will soon be obsolete. It is no longer a function of if, but when. The technology is in place; it is now a question of how quickly each organization can change its own culture to take full advantage of these new operating paradigms."*

The thought of a revolution typically conjures up images of *Les Miserables*, maybe *Che*, but the fact is the real estate industry is experiencing a real *REvolution* of a more subtle nature.

This is Realcomm's 15th year, and our journey through the intersection of commercial real estate, technology, innovation and operations

has been interesting. Since we started in 1999, the topic of technology inside our industry, despite its ups and downs, has grown consistently and substantially.

While the real estate industry struggled through the economic issues of the past five years, technology has continued to mature at an increasing rate. The growth has been explosive in areas such as mobile technologies and cloud computing, contributing to some of the most significant new technologies appearing in commercial real estate organizations.

Our theme last year was Fast Forward, supporting the idea that technology was becoming more widely adopted at all levels inside our industry. We believe we are now at a critical point where the speed these changes are taking place is so fast we are at the beginning stages of a *REvolution*—a point in time where things will change so radically that there is no turning back to the old ways. Proposed ideas and objectives, ways of doing things that we used to just speculate and talk about are now being established as best practices, such as:

- Real-time integrated ERPs
- Leases signed on iPads
- Paperless interactions with investors and tenants (including payments)
- Mobile platforms redefining organizational communications
- 3D visualized real estate portfolios
- COOs and other executives strategically embracing technology
- New job titles such as Strategic Data Analysts

- Sophisticated analytics driving business decisions
- Cloud platforms encroaching on established infrastructure
- Company portals as a means for organizing internal communications
- Information from multiple platforms consolidated into unified view
- Analytical data tools now in the hands of the non-technical end-user



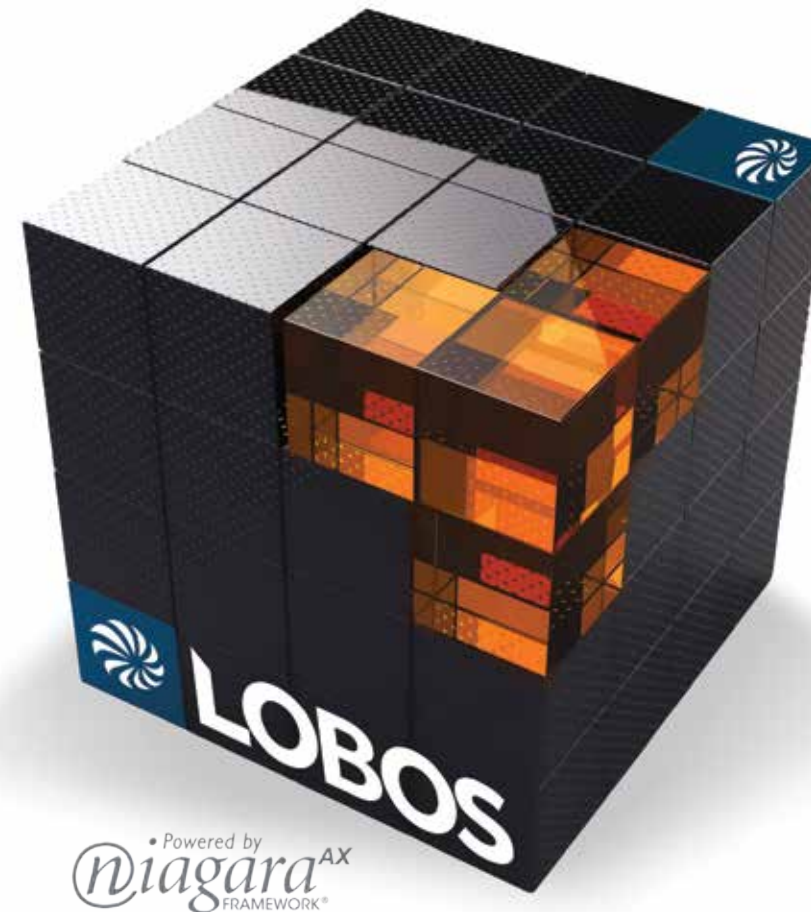
While not all of these trends are prevalent in every real estate organization, we have seen them successfully implemented individually in enough companies to feel confident that they do, in fact, represent the new trends.

The old ways of doing business will soon be obsolete. It is no longer a function of IF, but WHEN. The technology is in place; it is now a question of how quickly each organization can change its own culture to take full advantage of these new operating paradigms.

The other *REvolution* that is taking place is inside the Real Estate organization. Technology has historically been limited to the activities found in the IT department. Over the last few years, automation and innovation continue to creep into the activities of every department, ranging from the receptionist to the CEO, forcing everyone to rethink how technology can impact how they do their job. This is a *REvolution!*

The coming year should be a very exciting time, with a continued increase in the speed and frequency in which technology, automation and innovation is injected into a real estate organization. This continual increase in redefining business processes will ultimately lead to a transformed real estate operating model. We invite everyone to join in the *REvolution* and help to radically redefine how commercial real estate will be owned, operated and used for the next 100 years! •

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## Facility Information Management Dashboards: Understanding the Complexities



**Anno Scholten, C.E.M., C.D.S.M.**  
President  
Connex Energy

*"Most of these energy management applications are now SaaS- and Cloud-based, utilizing web-based dashboards as their main User Interface. Having a unique dashboard for each application from the many different manufacturers has created an enormously complex dashboard environment for the facility manager."*

**E**nergy and Sustainability Management Software for commercial buildings has quickly become a crowded and confusing market for building owners and operators. Today, a facility energy manager may choose from many energy and sustainability software categories such as:

- Energy Efficiency Analysis
- Energy Utilization Analysis
- Tenant Billing
- Energy Bill Management
- Capacity Management
- Time of Use Pricing
- Automatic Demand Response
- Supply Management
- Demand Management
- LEED Analysis
- EnergyStar
- Carbon Usage Tracking
- Building Energy Kiosks
- Energy Benchmarking and Modeling
- Occupant Engagement
- Sub-metering
- Fault Detection and Diagnostics
- Advanced Metering Infrastructure
- Waste Management and Recycling

Within each of these categories there may be twenty or more suppliers, with many focusing on one or two categories and a few attempting to provide a suite of many of these applications. These suppliers range from very large organizations such as Energy Services Companies (ESCOs), large Building Automation Systems

*Anno Scholten, C.E.M., C.D.S.M., is President of Connex Energy, a leading developer of applications and turnkey solutions that connect building and energy management systems together. He has spent the last 25 years driving innovation in building control systems and smart grid technologies. He has developed leading edge, smart grid energy products for the commercial building markets and has been a major contributor and leader in a number of critical standards efforts that have transformed building automation systems, including BACnet, LON, and oBIX.*

(BAS) manufacturers and a plethora of smaller start-up, venture backed companies.

Most of these energy management applications are now SaaS- and Cloud-based, utilizing web-based dashboards as their main User Interface. Having a unique dashboard for each application from the many different manufacturers has created an enormously complex dashboard environment for the facility manager.

When you add the other two facility management categories, Operations and Occupant Satisfaction, the number of dashboards quickly multiplies. These include applications such as:

- Budgeting and Forecasting
- Lease Management
- Tenant Management
- Air Quality Management
- Building Information Modeling
- Conference/AV Management
- Fire, Life Safety
- Parking Management
- Digital Signage
- Maintenance and Work Order Management
- Vendor Management

If you are the operations and energy manager, you could be dealing with twenty to thirty individual dashboards daily! This bewilderment of dashboards is creating a new level of complexity. You now have more data than you have ever had in the past for your facility, but they are all operating in their own silos.

### Integration

Many of these dashboards do not integrate with



each other or easily integrate data between them.

Each application runs in its own browser window, completely independent from each other. The facility manager typically has a large collection of bookmarks to find each dashboard and requires bigger and multiple monitors to display the dashboards side-by-side.

The energy efficiency dashboard won't seamlessly provide its data to the Carbon Usage Tracking dashboard. Energy Analytics applications can provide unique data analysis which would be valuable to the Demand Response application, but the energy manager has no easy way to integrate the two. (Even today we see facility managers cutting-and-pasting data between two browser windows.)

### Connectivity

Each dashboard application provider installs their own data connectivity gateway to the energy systems in the building such as BAS, HVAC, Lighting, Central Plant, Metering, etc. Many times, these gateways are proprietary and won't interoperate between different dashboard suppliers.

Further, each gateway typically needs its own external network connection and unique port requirements, causing extraneous meetings and angst between the facility manager and his IT manager.

### Security & Cyber Threat Protection

Each dashboard implements security and cyber threat protection in their gateway inconsistently, if at all, and many use non-IT industry standards. Each dashboard's gateway introduces another potential security hole in the IT management networks, requiring extensive gateway and user security management by the facility manager for each individual dashboard.

### Data Ownership

Each dashboard stores a replication of the facility's energy data in its cloud separately. Facility managers understandably have concerns: Who owns the data stored in those clouds? How can they retrieve it if they terminate their relationship with the energy application provider? This can lead to supplier lock-in, something many facility managers have experienced in the past with proprietary protocol systems; these managers would prefer not to repeat this occurrence with their energy management systems.

### User Experience

Each dashboard implements a different navigation scheme, menu

structures, and has different colors, logos, help level, etc. Diverse protocols require individual training on each dashboard for every



operator. Web-based user interfaces can also be updated on the cloud by a supplier overnight, possibly causing operator confusion the next day on new layout and features.

### User Management

Every dashboard requires its own user sign on/password management. They don't provide a unified, single sign-on access and single, user management capability for all dashboards. As facility managers handle personnel turnover, they must visit each dashboard to remove, change and add operators.

### Platform support

Every dashboard implements different browser platforms (Internet Explorer, Chrome, Safari, HTML5, Flash, iOS, Android, etc.) differently, some better than others. This typically forces the facility manager to either support the lowest common denominator browser for all dashboards, or utilize multiple browsers (some of which may be in conflict with corporate directives and support).

### Mobility support

Most energy management dashboards do not support mobile platforms (iPhone, iPad, Android, etc.) well, if at all. Very few have native Mobile Apps and those that do have inconsistent interfaces. This further magnifies the training issues for the facility manager for each operator and the mobile platforms that the corporation supports.

### Metadata consistency

Metadata is all about the point's physical and logical attributes; its name, some meaningful description, its physical location, the serial number of the attached equipment, etc. Unfortunately, every dashboard implementation provides its own metadata. A temperature sensor's name may appear as 'AHU1-2a SAT' in the Energy

*continued on page 8*

continued from page 7

Management System, or 'Supply Temperature for Second Floor' in the Maintenance Management System, or 'A2 T' in the Facility Management System. This further complicates data integration for the facility manager as he tries to discover if they all represent the same piece of equipment.

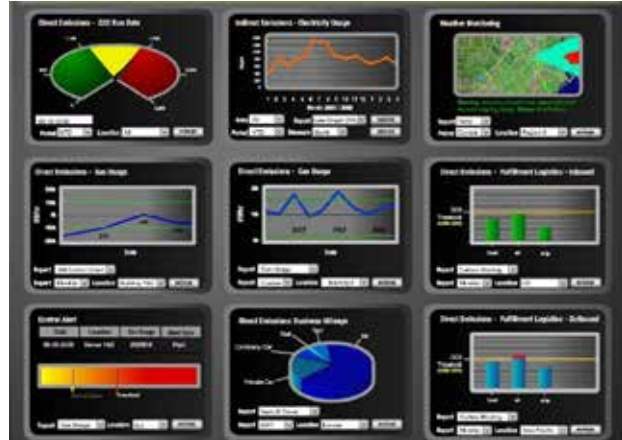
**Support**

Every dashboard IT issue currently must be solved uniquely. When a specific dashboard stops working, the facility manager must first ask for IT support to make sure there are no issues with the gateway connectivity, as IT departments regularly change their access rules; or the web browser required by the dashboard needs an update; or it had been updated, making it incompatible with the dashboard.

Each dashboard provider administers software updates on a different schedule, requiring advisories and notifications to the facility manager on the latest software patch. With multiple, unique dashboards, the facility managers are inundated with notifications every week.

So, how do we help the facility manager with this complicated

dashboard environment? We start with the three most irksome issues, Data Collection, Data Security and Data Ownership. Ideally, there should be a single data gateway, or at a minimum, a single technology data gateway. This gateway should not expose any part of the network to the public Internet and should implement all IT industry standard security processes. The gateway should be fully protected against all cyber threats and have full audit capability of all remote access. All energy data should be normalized and stored in a customer owned big-data cloud and the customer would have full control in providing managed access to this data for each energy management application authorized.



SaaS, Cloud and Mobile tech-

nologies have rapidly evolved Energy Management Software over the last ten years and will continue to do so. This has been a boon for the market, as we now have a much greater choice of applications and manufacturers. However, we must ensure we coordinate and simplify these technologies for the facility and energy managers who work with these systems. •



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## Smart Buildings: The Building Owner Point of View



**Casey Talon**

Senior Research Analyst  
IDC Energy Insights

*“Early adopters in commercial, government, higher education and retail real estate segments have generated case studies and data demonstrating the broad business benefits of developing smart buildings; however, widespread adoption of enabling technologies has fallen short of the full market potential.”*

**B**uilding owners have a vital role to play in determining the future of energy management. At the macro-level, energy consumption in buildings a \$200+ billion bill for our economy every year. Energy efficiency has been a growing interest area for owners looking to save money and boost their bottom line. Smart building technologies have emerged as the next generation of energy efficiency solutions that generate a wide variety of appealing business benefits.

The smart building technologies available in the market today enable real time facility optimization. This means that sophisticated systems of automated controls change how the equipment in a building operates to comply with business policies and achieve new levels of efficiency and energy management. The benefits of smart buildings investments resonate with stakeholders across business units. Drivers for investment may vary from sustainability to pure economics, but smart building solutions can generate wider reaching benefits than traditional building efficiency solutions. Smart building solutions enable maximized occupant comfort alongside operational efficiencies that yield significant cost savings, which can support a wide array of business priorities.

Early adopters in commercial, government, higher education and retail real estate segments have generated case studies and data demonstrating the broad business benefits of developing smart buildings; however, widespread adoption of enabling technologies has fallen short of the full market potential. Despite early market challenges, IDC Energy Insights projects

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that 2013 will be the tipping point for the smart buildings market and generate significant growth in investment because building owners are increasingly aware of how these solutions help them manage costs and reach their top business objectives.

Across the board the “Great Recession” generated new constraints on businesses and drove them to do more with fewer resources. The slow recovery has brought new focus on cost containment and efficiency. From predictive maintenance of HVAC equipment to automated lighting reductions for demand response, smart building solutions help building owners maximize cost

savings while providing an optimal occupant experience. Furthermore the energy savings generated when smart building solutions are deployed can be translated into shrinking environmental footprints, progress toward sustainability goals, and the bottom line benefits of pure cost savings.

The development of smart buildings is a strategic investment process; and today building owners recognize the immaturity of installed energy management systems in their facilities. In fact, according to IDC Energy Insights 2013 Smart Building End User Survey, only 14% of respondents self identify their buildings as mature smart buildings. This recognition of system limitation signifies a broad opportunity for new investment. There is investment underway that will transform facilities into smart buildings. There is commitment to investment, in fact 33% stated they would use smart building technologies in the next six month or year. Furthermore, they have money to back up their interests. Our

research indicates real momentum is underway in smart building development.

The reason there is so much interest in smart building solutions is because they help owners move from a project-by-project system of efficiency improvements to deploying holistic energy management strategies. These new strategies help owners prioritize new capital expenditures, ensure their existing systems are operating to the best of their design, and give them new tools for tracking efficiency improvements, operational changes with unprecedented enterprise-level visibility. This next generation of energy management solutions generates real value for key stakeholders across the business. These smart building technologies are tools to crack the numbers for the CFO, quantify the operational impacts for the engineering team, and track occupant impacts for the facility manager. It will be some time before we see a large number of fully optimized, mature smart buildings; but building owners are taking note of the benefits of these enabling technologies and integrating new systems in their facilities today. •

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## Is Your Building System Secure?



**Anton Hofland, MSc**  
CEO  
2024Sight

Today's buildings have become increasingly smart and inter-connected. Every second, Supervisory Control And Data Acquisition (SCADA) building systems controlling the world's connected buildings exchange gigabytes of data with each other and the outside world. Interconnected building SCADA systems bring many enhancements, including optimized resource utilization, improved facility management and increased service levels to building occupants.

But there is a risk with inter-connected building SCADA systems, specifically the exposure of SCADA system vulnerabilities to the outside world, risking outside interference (and consequential damage) to the system and the building. Figure 1 shows an example of building SCADA systems and how SCADA systems may have been installed.

Just how exposed are SCADA systems? The danger was highlighted in 2012 when research groups identified vulnerabilities in several of the most commonly used

systems in the SCADA industry. But even before this research was published, inherent vulnerabilities had caused serious damage. Three examples are:

- An incident destroyed the pumps of a local water company in the USA after hackers logged into a connected SCADA system. It seems the SCADA system was only protected with a limited length password.

- The infamous Stuxnet worm deliberately bridged an air gap in the Natanz installation in Iran in both directions, not once but several times. Later versions of the worm attacked the PLC systems of the enrichment

installation, causing serious damage. Stuxnet accidentally broke out of the confinement of the Natanz network and spread into the Internet—which is how it was detected.

- In October 2012, an incident occurred in a US power utility where a turbine control system was infected by a variant of the Mariposa malware. The malware had been introduced to the SCADA system using a USB device, which had been used to upload software updates during a scheduled outage. The infection delayed plant restart by approximately three weeks.

There are two main reasons why SCADA systems are becoming increasingly vulnerable:

The first is commoditization of hardware and operating systems. In the past, many systems were running on specialized or proprietary hardware, and used unique operating systems. While 'Security through Obscurity' is not actual security, specialized systems of the past would have presented a higher barrier. Unfortunately, today's technology has well-understood weaknesses that present little or no barrier.

The second reason is the lack of understanding about the complexity and role of these systems. End-users, implementers and manufacturers of SCADA systems must realize that these systems are no longer just electrical systems. They are fully-fledged, connected IT systems with all the advantages, disadvantages, strengths and weaknesses therein. Nevertheless, during construction of a project they are often installed in the same way as their predecessors, i.e. as electrical systems without protection.

How can these systems be protected?

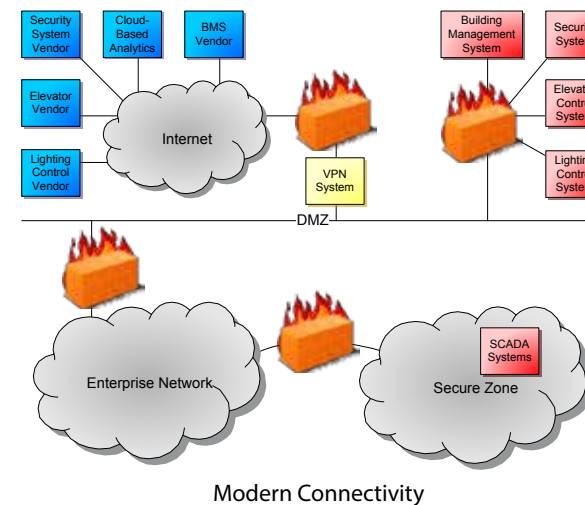
### Securing Building Systems by Upgrading

The first thought that comes to mind is to ensure that a SCADA system has malware scanners and is patched to the latest OS and application release levels. While updating, patching, and scanning for malware is sound advice, it seems that those who operate SCADA systems

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have been slow to implement. There has been a longstanding criticism that systems are not upgraded as quickly as possible and that they are left running un-patched for days, months or sometimes even years.

The main reason for this is simple enough. Upgrading systems brings as much risk of outages as keeping with the status quo. Safe upgrades are only possible when the upgrade has been tested. Testing requires a testing approach, a test environment and effort.



Ideally, you would replicate a system and then test on the replica. How is that to be achieved with your critical building system? Even under the best of circumstances, testing an upgrade and the upgrade implementation is a lengthy and costly process, which requires careful planning. Since delay is inevitable, upgrading systems as the sole remedy is not an effective option.

### Building Secure Systems

The other option is to secure building SCADA systems by design. To achieve this, the first and most important step is to accept that today's SCADA systems are IT systems, for which IT experts should design the appropriate environment. While designing the environment, the following areas should be considered:

1. Physical Security: Invite IT infrastructure and IT security experts to participate in the project during the early design stages. Then it is possible to ensure that the physical security and environmental requirements for the building SCADA systems are met in advance, rather than being retrofitted later with great difficulty (and at increased cost).
2. Infrastructure: Engage IT and IT security experts to help you design the appropriate IT infrastructure. A properly designed IT infrastructure will ensure that vulnerable building systems are never directly facing:
  - a. The Internet;
  - b. Any other remote access connection;
  - c. Other building systems; or
  - d. Your enterprise network.

By means of a well placed and carefully managed set of firewalls, the IT experts can design and operate a properly

secured network infrastructure. For each SCADA system the firewall configuration should block incoming and outgoing traffic by default. A secure VPN method may be implemented to provide remote access. Figure 2 shows how such a configuration might look.

3. System Standards: IT experts must define standards to specify:
  - a. Software and hardware configurations for servers and desktops;
  - b. Remote server management facilities; and
  - c. Physical installation requirements.

All SCADA system vendors must meet the standards to be considered for the bidding process.
4. Policies & Procedures: The IT experts create the IT policies and procedures, which the SCADA system vendors must comply with to be considered for the bidding process. Policies should include:
  - a. Mandatory removal, disablement or renaming of default accounts;
  - b. Password strength and password management;
  - c. Malware scanning;
  - d. Upgrading, patching and testing;
  - e. Interconnectivity and firewalling between building SCADA systems, as well as enterprise and internet-based systems;
  - f. Backup and recovery;
  - g. Remote access; and
  - h. Monitoring, including monitoring of administrative users and the creation of administrative user accounts by third parties.
5. Testing & Commissioning: Ask IT to define a set of testing and commissioning criteria which every system must meet to be accepted.

6. Responsibility: Appoint an organization to be responsible for the management and monitoring of your building SCADA systems, network and security, and seek their input during development and construction.

7. Change Management: Re-evaluate all of the above during the life span of the real estate project. IT develops much more quickly than any real estate project, necessitating ongoing adjustments and changes.

### Conclusion

With a concerted plan combining technology, policy, and procedures, it is possible to design and implement a highly secure approach for even the most vulnerable SCADA systems, without having to sacrifice SCADA system connectivity. Building a secure system, however, requires a transformation with respect to when and how IT gets involved with a real estate project. •

The following websites provide further information:

[www.ics-cert.us-cert.gov/](http://www.ics-cert.us-cert.gov/)

US Government Industrial Control Systems Cyber Emergency Response Team

[www.securityincidents.net](http://www.securityincidents.net)

Repository of Industrial Security Incidents

[www.2024sight.com/publications](http://www.2024sight.com/publications)

2024Sight publications



## Trending in Real Estate Finance: Is Your Finance Department Ready for the Real Estate Recovery?



**Paul Throldahl**  
Anterra Technology

The Urban Land Institute and PwC US noted in their annual Emerging Trends publication that the commercial real estate market will materially advance in 2013 with “modest gains in leasing, rents, and pricing” across the United States.

As the industry gears up for a recovery, thus creating a more competitive environment, the finance departments within major property owners, REITs and other organizations must be ready to manage new properties and improve their reporting game. The ability to quickly aggregate and analyze data is a critical ingredient to effective strategic decision making. Finance departments will be pressed for accurate data and rapid analysis from multiple sources in order for the company to take advantage of investment opportunities.

Business Intelligence (BI), which has long been considered an ambiguous term, is finally emerging as a real tool for finance departments to vastly improve reporting speed, accuracy and depth. The goal for utilizing BI is to reveal the right information at the right time, to aid in making decisions that have measurable impact on the business.

Such an ambition takes more than just solid technology, however, it also requires thoughtful design and a clear understanding of the information gaps within real estate organizations.

Trademark Property, an investor and developer of regional malls, outdoor retail and mixed-use properties, was among the first to use BI to create a single source of trusted data that

replaces multiple silos of financial, property, tenant and lease information, and reduces the time involved with creating consolidated financial statements and management reports.



### Case Study: Trademark Properties

Since 1992, Trademark has invested in or developed over 10 million square feet of retail properties worth over \$1.2 billion and currently operates more than six million square feet.

As asset and leasing managers, the company is constantly focused on making the most of its existing investments, while expanding its capacity to develop and manage more assets.

Trademark's goals for utilizing BI included reducing the time spent creating consolidated financial statements and management reports; reducing the amount of time spent aggregating and formatting data for sales, rent roll and occupancy reports into the company's professional standards; and finally, to empower its team with accurate and timely information to help make each staff member successful in their role. Their implementation of a cloud-based business intelligence solution enabled them to produce the reports for consolidated financial and real estate reporting as well as meet other stated goals.

Using BI to achieve these goals entailed improvements in many areas, including:

- Reduction in time spent to produce key financial and real estate management reports (from weeks to seconds)
- Elimination of spreadsheets in month-end reporting

*Paul Throldahl is currently a partner at Anterra Technology. Anterra offers cloud-based business intelligence for real estate, development and construction. Prior to that, Paul spent nearly four years as the Senior Vice President of Global Sales at ARGUS Software. In addition to running sales and services, Paul served on the ARGUS executive leadership team and led the sales integration of several key acquisitions. Additionally, Paul has held senior sales and leadership positions at high growth software companies including PhD Virtual Technologies, VoiceGenie and Trailblazer Systems.*

- Ability to increase property portfolio by over 50% without increasing accounting staff
- Thorough, fast and impressive reporting for meetings with investors and partners
- Mobile access to mission-critical information via web browser or iPad

“We have eliminated spreadsheets in our financial reporting and caused the productive capacity and overall satisfaction of our staff to increase dramatically,” said Doug Harmonson, Trademark's Director of Research and Technology. “This progress aligns well with our mission to make our team more accurate, efficient, accountable, and informed.”

Trademark's large distributed workforce can now use its BI solution to access key reports and information on any browser. “Our staff was immediately more productive and informed,” added Harmonson. “Utilizing business intelligence has significantly expanded the capacity of our staff and is transforming our organization by giving us complete operational visibility.”

Also noted in the Emerging Trends report: Stephen Blank, ULI's senior resident fellow for real estate finance, mentioned that investors “must keep in mind recent progress made in the industry as they prepare for a slow but steady recovery”. With this in mind, companies with robust reporting platforms that can combine data from accounting, leasing, and valuation systems will be in the best position to take advantage of the market as each opportunity will require a greater level of scrutiny. •

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# DISCOVER WHO IS LEADING THE DATA PROTECTION REVOLUTION



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at the Restore Point Booth# 7266

## An Inside Look at How Technology, Automation and Innovation are Redefining Real Estate Operations

*An interview with Scott Morey, General Growth Properties, RJ Juliano, Brandywine Realty Trust and Darrell Smith, Microsoft*

Since 2008, financial pressures on the real estate industry to reduce expenses by optimizing operational costs have propelled the topic of technology and automation into mainstream discussions. From improved business analytics and 'big data' for smarter decision making, to cloud computing and powerful mobile technologies for a more efficient mobile workforce, new technologies have permeated the marketplace. Not only are they happening at an unprecedented rate, they have matured and become less expensive, fueling more widespread adoption.

These changes are happening so fast, one might easily conclude that the commercial real estate industry is in the midst of a technological revolution, a period of dramatic change brought about relatively quickly by the introduction of new technology.

RealcommEDGE invited Scott Morey, SVP & CIO of General Growth Properties, and RJ Juliano, CIO of Brandywine Realty Trust from the commercial real estate sector, and Darrell Smith, Director of Facilities & Energy for Microsoft representing the corporate sector, to weigh in on how their organizations have been impacted by this revolution and what they see ahead for the industry.

**REALCOMM: RJ, what technology driven initiatives have had the greatest impact on your operations in the past 12-18 months?**

**Juliano:** It's been a pretty exciting time for the IT group at Brandywine. Four projects come right to mind that have been pretty impactful. The first is a dashboard system we call 'Search' that allows instant access to almost all company data. This was a huge benefit in terms of quality of information and ease of access, as well as



Darrell Smith, Microsoft

improved reporting and analytics. Second is a project we call 'The Lift', which is one of the first automated parking garages in the U.S. Historically, this would have just been considered a traditional construction project, but there is so much software and technology embedded in the building, it has become just as much an IT project. Third, we are connecting our portfolio of 220 buildings so that we have better centralized control and remote access. And fourth, definitely the mobile revolution and handling the influx of smart phones and tablets.



Scott Morey, General Growth Properties

**REALCOMM: Have you seen recent changes in the way executive leadership views technology?**

**Juliano:** Yes, I've definitely seen a trend in senior management's interest and involvement. Consumerization and mobile technologies have helped to knock down many barriers and fears about technology, changing perceptions AND expectations greatly. Now, my challenge is explaining that behind all the simplicity and elegance of today's apps there is a great deal of architecture and engineering!

**REALCOMM: How about from an Intelli-**



RJ Juliano, Brandywine Realty Trust

**gent Buildings perspective? Darrel and Scott, have you seen an increase in the level of awareness, interest and activity surrounding the smart, connected, intelligent building topic within your organization in the last 12-18 months?**

**Smith:** Yes. Like everyone else, with the increase in financial pressure, we looked at ways to reduce energy costs, optimize our building assets and lower labor costs. With our Energy-Smart Building Project, we have leveraged the cloud and are using software to extract data from the many disparate building systems within our campus onto one platform. We are now collecting half a billion—yes, that's

billion with a 'b'— data transactions every 24 hours from 125 buildings that occupy 15 million square feet and house 57,000 people. And the beauty of it is it was more a retrofit that was a fraction of the cost to deploy and seamless to the building occupants. We did not replace existing systems; rather, we installed a software overlay that provides capabilities that were lacking with the existing systems. Now, I'm out there talking to our customers and partners and they're seeing the results, and the momentum of connected smart buildings is gaining some serious traction, both internally

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and externally across all verticals, from worldwide utilities to our federal EPG (Enterprise Partner Group).

**Morey:** I believe at some level, many companies are confident that their buildings are already running efficiently. What has happened over the last 18 months is there is a more common understanding that technology can create increased visibility and oversight on a range of property-specific functions like energy, security, etc. As a result, the level of automation in the industry around building systems and controls has increased significantly. It is embedded in the day-to-day thoughts of not just operators but also developers. With that foundation in place, the industry is now turning a corner in finding more innovative ways to combine these various technologies and building control systems to enhance the experience for tenants, employees and consumers. At GGP in 2012, we piloted a couple of the newer energy management solutions to understand both the financial returns and how well they integrated into our operating model. Overall we are seeing more than a 20 percent return on investment. We are excited about the results and will continue to look at proven solutions to incorporate within our operating model.

**REALCOMM:** Give us your perspective on the four components of a smart building: 1) energy efficiency, 2) operational efficiency, 3) tenant experience and 4) financial optimization. How does your organization's technology strategy encompass these four major components?

**Smith:** I will start with energy efficiencies because this is where a company can have a significant impact on financials (lower costs) and lower carbon emissions (sustainability). The business case for our Energy-Smart Buildings program was anchored in return on investment. This stems from the ability to use the operational data from the existing building systems to optimize the assets and take actions that lower costs and improve the employee (tenant) experience. The data has always existed, but we lacked the ability to extract this data and apply algorithms to make data driven decisions. With regard to Operational efficiency, the outcome from leveraging the analytics is

the ability to optimize labor and focus on areas that have the highest return. We are using fault detection to identify either equipment not running as designed or where equipment set points are outside our standard setting. We are monetizing and prioritizing the faults and this is optimizing our labor force. Also, there are new reporting capabilities that have replaced many of the manual reporting efforts. The Tenant Experience or, in our case, the Employee Experience, is very important to Microsoft. In the past, we have used people in the building as sensors. Calls from the employees would trigger equipment issues. With the power of software, we can identify equipment faults and make repairs prior to the employee becoming uncomfortable. In fact, once the fault is identified, the technician can stop at the warehouse, pick up a part and make the repairs. Before, we would go to the buildings and identify the issue, run to the warehouse and back to make the repairs. This is a reduction in 'windshield' time of the building engineers and operators and reduces labor hours.

**Morey:** I believe any good strategy and plan needs to find a way to balance all four. If you focus on any one particular area and ignore the others, there will be a significant loss in the value of the program to the broader company. For example, if the focus was solely on energy and operational efficiency, a solution could be put in place that had negative implications on the experience for the tenant, resulting in a far greater income loss than the savings gained on reducing energy usage. Ultimately the retailer and consumer experience within our properties is extremely important and key to whatever we put in place.

**REALCOMM:** To what extent has technology deployment in your company required organizational realignment?

**Juliano:** It's definitely had some major impacts on our alignment. When I came on board, buildings weren't considered part of the IT domain. That has completely turned around through the deployment of centralized control and remote building access systems. I now have staff dedicated to building infrastructure and technology. Most recently, we have expanded the realignment of marketing and media under IT. The intersection of marketing, media and technology is massive and growing.

**Smith:** Our technology deployments have guidelines that help drive alignment across the organization. I'm with the real estate facilities group, so for me the most significant realignment has been within my organization. In the past, we have always been very 'time based' when it came to facilities maintenance—we changed 26,000 air handler filters across the campus every quarter because a timer went off. Now, with the new analytics we get from our building systems, our maintenance has become 'condition based', meaning we are writing algorithms that give us the principles on when to change the air handler filters. We're optimizing our labor and can actually prioritize our work based on cost, customer experience and business continuity versus business interruption over cost. It is important to note that within our Energy-Smart Buildings Program, one of our five team members responsible for deploying technology is the

liaison with our overall IT group, and this role is invaluable to the success of the project. IT really helps facilitate the deployment, so it's very important we have a strong relationship.

**Morey:** Technology enables good behavior, but cannot correct bad behavior. It is vitally important that organizational structures and the people residing within those positions are aligned with the company's overall strategy, mission and values. Any changes in technology that impact organizational models need to be part of an existing plan which is only further enabled by software. What we have put in place has enhanced our business operating model. The goal is to create additional time to focus on value-added activities in the properties. So instead of doing more paperwork or spending time collecting data, the focus is on enhancing and optimizing the assets through the information at hand.

**REALCOMM:** What is the most exciting project you're currently working on?

**Smith:** Everything! Definitely our Energy-Smart Building deployment I mentioned earlier. What gets me excited is how the capabilities continue to advance and how we are addressing mobility and the cloud to create a disruption in the facilities management industry. Another exciting focus over the last couple of months has been mobility. We want to enable our team with tablets and smart phones to automate processes and drive labor efficiencies. In fact, we are piloting mobile solutions coupled with MS Tags on the assets. I see exciting capabilities coming from this pilot.

**Morey:** General Growth Properties is an exciting company to work for. In the last two years we have spent a lot of time improving the operating model and aligning IT to the broader company strategy. Seeing the results of our efforts and the positive impact it has made to our broader operating platform is exciting. We have been innovative in looking at everything we do at an enterprise level versus in silos. I have often seen companies make changes for specific groups and not recognize the up and downstream effects of those changes. By looking at the entire life cycle of how we operate and making foundational changes across those groups, I believe in the short and especially long term we get better results.

**Juliano:** That's a tough question because there are so many. In addition to the four I mentioned earlier, I'd have to add marketing. I really have fun with that side of my brain. In my marketing role, I'm responsible for making sure the brand and our marketing and social media platform really interact. It might be surprising, but there really is a lot of intersection with IT; it's not only about what the message needs to be and the visuals that go along with that, but you then get into what helps define the strategy. It also begins to produce new functions that need to be done or shifts in functions, which in turn require new tools, new work flows,



new data access, new analytics. Half of my monthly report to management is a social media analysis about the tools we are using, how they are integrating with our website, and what information we are supplying to the universe. We have a reputation for being easy to work with; it's my job to ensure our tools and websites enable and deliver on that brand reputation.

**REALCOMM:** How are you prioritizing and selecting potential automation projects?

**Morey:** In the end it is about return on capital, not just for IT projects but for any project across the company. When there are cases of IT projects that provide a superior return, they become a priority for the organization.

**Juliano:** There is the obvious, measurable ROI, which never goes out of style, but there is also an 'organizational' ROI, where we look at whether or not the potential automation will eliminate the non-value add commodity work so that we free people up for value-add work.

For example, in IT, we've gotten rid of a lot of the commodity work by outsourcing or putting software in to handle certain tasks. We're trying to do that for the rest of the business. We completely reworked AP, AR and the related cash flow over the last six years. Working with our CFO, we replaced the commodity work of stamping invoices and cutting checks, refocusing people on analytic work and their primary jobs. We're a public company, so we've automated a lot of the audit, and we're trying to do more of the regulatory reporting, as well. That kind of value-add criteria drives the prioritization.

**Smith:** The Real Estate and Facilities Team answers to the CFO of the company. Our investments are anchored in a financial return. We also apply principles with our investments in technology solutions and include 1) beneficial 2) practical 3) scalable and 4) supported. If a solution does not meet these principles and does not meet our financial return, we don't make the investment.

**REALCOMM:** How are you driving adoption?

**Juliano:** First, you listen. It's easy to drive adoption when you're giving people what they ask for to start with. My team spends a great deal of time out of the nest with our engineers and architects. I actually spend a lot of time with our tenants and vendors. In the past, we were focused around the data center and people came to talk to us occasionally. Now, I'm in the data center once a year, and that's usually to show the auditors that it's locked. The other part of it is trying to always be looking a couple of years into the future. It's understanding the business problem we are trying to solve so if the technology changes and new functionality becomes available, we don't end up delivering a product that falls short of their expectations, which have

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changed during the process. It's not doing the \$1 million two-year project if you can help it. Instead, you're doing 24 one-month projects over two years. It's all about constant dialogue.

**Morey:** We all know that once a solution is ready to be deployed, how it gets deployed, how people get trained and how the initiative is supported on an on-going basis is critical. We spend a lot of time at the beginning, during and after projects to recalibrate and ensure the end solution meets the needs of the organization and provides value.

**Smith:** I have a fundamental principle of 'learn by doing'. It is with this guiding principle that we explore new and exciting technology and set stretch goals for my team. This covers not only Technology but other key programs. Microsoft has an entrepreneurial feel where we have latitude to explore and create.

**REALCOMM: Do you have a strategic plan to encourage and promote innovation in your organization?**

**Smith:** Microsoft is an innovative company and I'm surrounded by innovative people and products and services. As an employee, we are not asked to be innovative, it's expected. Microsoft



produces the most innovative hardware and software solutions, and our Partners are building their solutions on Microsoft technologies. It's the ability to leverage our Partners' solutions coupled with the power of software that is having the biggest impact to innovations.

**Juliano:** Yes. My team is constantly working with other groups in the organization to introduce new technologies and to look down the road for next year. IT's strategy is a mix of two things; it's a blend of our corporate strategy with where we see the technology evolution/revolution going. It's watching for new technologies as they evolve to determine if they better address the business needs. It's a constantly moving thing. Some CIOs will tell you they have a three-to-five year plan. I'm sure they do. But ask them in three to five years how much of that plan was actually delivered. You've got to have a three year plan, but you've got to revise it every year. I

certainly couldn't have predicted five years ago that iPads were going to be the center of the universe.

**Morey:** As a company we are committed to fulfilling our mission statement and following our core values, which are High Performance, Attitude, Do the Right Thing, Together and Own It. Using them as a foundation, we have a culture focused on being better individuals and a better company. •

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# CORPORATE TECHNOLOGY

## Data Scientist in RE and FM: Sexiest Job in the 21<sup>st</sup> Century

"I'm too Sexy for My Job," a Play in Two Acts.



**Nancy Johnson Sanquist**  
Manhattan Software



**John A. Serri, PhD**  
Manhattan Software

*"The prestigious Harvard Business Review named the data scientist the "sexiest job of the 21st century" which almost certainly had to be the first time the word 'sex' made the HBR pages and definitely got people's attention."*

### Act One

**D**ell Graeser, a research analyst, was working diligently on a problem that involved sorting through a vast amount of information culled from patient genome data on the campus of a leading pharmaceutical company located in La Jolla, California. Dell was originally hired to be part of a team of data scientists who had similar backgrounds, including advanced degrees in computer science, mathematics, and physics; he was also part of the first master's program to grant a degree in Analytics from North Carolina State University. In the middle of searching for DNA sequence anomalies, he received a text message from his boss telling him he was to meet with the staff that managed their global real estate portfolio to discuss an urgent situation. This was curious—he had no idea why this group of architects and ex-real estate brokers would want to talk to him.

### Act Two

Tom Haworth, the VP of Global Real Estate for this company, had received a stunning request from the CFO the previous day. He usually reported on the portfolio every quarter, but he was now informed that due to a merger the CFO was demanding that the real estate group deliver hundreds of millions of dollars in savings from real estate to satisfy Wall Street and the shareholders.

Luckily, Tom had implemented an Integrated Workplace Management System (IWMS) three years previously, so he had accurate, reliable data on the company's real estate and was able to merge that with the Computer-Aided Facility Management (CAFM) data from the newly acquired company. Tom realized this was a big data set and that he needed skills found only in the R&D group: he needed the help of a data scientist.

The IWMS contained information on the total

cost of occupancy (TCO), lease expiration dates, the capacity of each building and the demand forecast of all the business units. The data was structured in a geographical hierarchy from the floor level, to building, to city, to country, up to the region. The IWMS also contained all the facility requests, projects, and work orders from the last two years. Given this information, Dell quickly realized that the well-organized data allowed a full understanding of the portfolio and now, working closely with Tom, he could use this information to make the right strategic decisions.

Dell was by nature a curious fellow, and determined to rise up in the company. He used a set of analytical tools he developed in his DNA analysis work and was able to apply them to the 'real estate challenge'. He quickly showed the real estate (RE) team how some buildings were highly utilized while others were not. His analysis of trouble tickets identified where there were problems with certain buildings, and his clever use of utility billing data allowed him to execute energy usage analysis.

Within two weeks, Dell had developed a heat map showing the portfolio of buildings; those that were underperforming were colored in red. It was a surprise to the entire RE and facility management (FM) team that so much information was now available to them visually. Utilizing the heat map application, Dell showed how each building's KPIs compared to the average, and to the best and worst buildings.

Now that Dell had the basic portfolio model in place and some useful visualizations, he could demonstrate the kinds of decisions that could be made and how they could use the data to create a more efficient portfolio while reducing costs. The question from an analytical perspective was: "How can I rearrange the configuration of my portfolio with the goal of reducing the overall TCO, and what would be

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*This article is part of the Big Data and Analytics Playbook Initiative created by Nancy Johnson Sanquist, VP of Manhattan and IFMA Fellow and John A. Serri, PhD and VP of Strategic Initiatives for Manhattan Software. You can find out more about the Playbook by contacting [nsanquist@manhattansoftware.com](mailto:nsanquist@manhattansoftware.com).*

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the cost of getting to this final state?"

Dell proceeded to use his arsenal of modeling tools and developed an optimization scheme for real estate portfolios. He was doing something that had never been done before. After eight weeks of intense effort, Dell and the team came up with three compelling options that would reduce their annual cost of occupying facilities by 20%. This came to a savings of hundreds of millions of dollars over a three-year period.

Our DNA modeler (or data scientist) had come a long way and saved this company a substantial sum of money, while also providing the information that would allow the CFO, HR and VP of Real Estate to confidently move ahead with the final plan.

In this realistic, but fictional story, Dell did not realize he was paradoxically both 'foot soldier' and 'master mind' in a management revolution fueled by the convergence of mobility, cloud computing, new technology and social media—a phenomenon recognized by Gartner as the 'Nexus of Forces.'<sup>1</sup> This convergence is now seen as important to RE and FM. New skill sets are required in our profession possessed by left-brain 'sexy' data scientists who are joining forces with RE analysts who are usually characterized as right-brained, visually oriented planners, designers and urbanists who are moving our profession from the transactional to the transformative.<sup>2</sup>

### The Sex Appeal of the Data Scientist

Sex appeal? What is that all about? The prestigious Harvard Business Review named the data scientist the "sexiest job of the 21st century"<sup>3</sup> which almost certainly had to be the first time the word 'sex' made the HBR pages and definitely got people's attention. The title was created by two corporate heads of data analytics, D.J. Patil (LinkedIn) and Jeff Hammerbacher (Facebook). They defined data scientists as those professionals who use evidence-based work to make discoveries from the analysis of large amounts of both structured and unstructured data.

The question is this: What type of person is able to take massive amounts of apparently unrelated data accumulated in different places and make sense out of it while learning something new? The challenge is to find that one person who possesses information technology and analytical capabilities to extract data, but who can also work with a team to ask the right questions about the business they are analyzing. Fortunately for Dell, the former

requirement is more important than the latter. Nevertheless, Dell needs to guide the right-brains on the team to ask the right questions. Part of Dell's training at NCSU was just that: he had taken a course in developing analytical models of business processes.

### The RE and FM Data Scientist Manifesto

In order to make the data scientist relevant to RE and FM, we have created a process model:

#### 1. Create An Analytic Culture

As Tom Davenport, the guru of big data and analytics, has pointed out, "Whenever we go to a company that is really good at analytics, we find that an analytical orientation is

deeply embedded into its culture." Think about our story of Dell. The real estate group looked to the data scientist to help with a problem that they recognized could be solved by using an analytical approach because it was part of the culture of the company.

Examples of analytic corporate cultures include Sportvision, where CEO Hank Adams, uses words like 'vectors', 'velocity', and 'granularity' as he describes not a company designed for sports, but a business of collecting data. They make complete digital records of a sports game and then not only analyze that performance, but use the information to predict the outcome of future events. Or think of the Obama campaign, which had an embedded analytics culture in which everyone involved in the election collected data, measured performance and then adjusted marketing and communications to realize the best results. (The team included 100 data scientists.)

Determine if there is a culture of analytics in your company or in parts of the business. If you are part of a financial firm, the entertainment industry, or a consumer markets organization, there will certainly be a centralized group that does analytics. The question is whether your group can draw from the value of the data scientists in the organization.

#### 2. Design A Data Strategy And Phase Execution

A key area of importance is that you must have sufficiently accurate and current information on all aspects of your real estate portfolio to even think about working with a data scientist. This means that you have already designed a data strategy for implementing a real estate application, IWMS or CAFM solution.

Components of the data strategy include:

- Define how RE and FM will use data to make decisions on real estate and facilities strategies (the vision). Perhaps it is reducing costs by X%, or prioritizing the projects that will yield



more profit centers, or determining which locations should be focused on geographically.

- Determine the data needed to meet these objectives by doing assessments of data coverage, quality, integration, capture, redundancy and visualization.
- Define a plan to ensure you have the processes in place, the right technologies (e.g., to better understand location information, you may have to integrate with a Geographic Information System (GIS) to expose visual patterns never realized before), the resources and skill sets to get the required data.

#### 3. Lure A Data Scientist To Re And Fm

RE and FM professionals must execute the second stage described above before the data scientist can enter and do their work. If you work for tech companies headquartered in Silicon Valley or similar locales, it is likely you have this skill set at your disposal. However, in other industries there may be a dearth of available prospects and they are in high demand.

How do you lure them to the RE and FM side? A good data

scientist possesses skills in math, statistics, probability and computational skills; in addition they have a fierce curiosity which drives them to dive beneath the surface of a problem, come up with the right questions and determine hypotheses to be tested and analyzed. They enjoy a challenge and welcome the opportunity to help create new customer-facing products and services.

Retaining this valuable asset is important! Provide them with the right environment and tools; and since this is a highly skilled individual, compensation must be competitive. Furthermore, you cannot keep them only in the FM/ RE box; the data scientist needs to be part of the data analytics community at large and remain an active contributor to this group, to keep up to date with new ideas and methods in the entire company.

#### 4. Execute Analytics And Make Decisions

The data is ready and the data scientist is working alongside you. Now comes the fun part. Mine your data set(s) and look at the results. If it involves location data, which it most likely will with a real estate problem, it is worth linking the data to a GIS to view the results on a map, which will show patterns that would not be otherwise obvious in a report. The more visual, the more interesting the analysis.

#### 5. Tell The Story

The last phase of the analytics project with a data scientist is to tell the story publically.

Take advantage of the media (like this publication) in our industry to explain to others how and why you mined various data sets (most likely structured and unstructured) for analysis and how it influenced your decisions. Since this is a new information arena for RE and FM, innovative professionals need to hear from their colleagues as to why they should go on this new adventure with their sexy guide, the data scientist.

### Conclusion

You may not have the skill set to be a data scientist like Dell, but the purpose of this article was not to send you back to Stanford to pursue an advanced degree in analytics. The point is to be aware that this emerging skill set may be incredibly valuable to your RE and FM organization. If your company management is not aware of this sexy new job category, perhaps you can lead the way to creating an analytical culture, as it will prepare your company for one of the most interesting ways for business to be conducted in the future. •



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Download a collection of articles from Manhattan Software, including the Gartner research report titled "Mobility & the Nexus of Forces: Creating the New Experience."

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<sup>1</sup> 'The Nexus of Forces for RE and FM' is a Manhattan series of white papers and a Gartner research paper which includes how this phenomena is affecting mobility, space planning, as well as the integration of real estate and maintenance and can be downloaded at [www.manhattansoftware.us/news](http://www.manhattansoftware.us/news)

<sup>2</sup> A concept espoused by Jim Baker of Accenture, at a CoreNet Global Summit he presented with the authors in the Fall of 2012.

<sup>3</sup> Davenport, Thomas H. and D.J. Patil, "Data Scientist: The Sexiest Job of the 21st Century", Harvard Business Review (October 2012). <http://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century/ar/pr>

## Walmart International Real Estate's Global Technology Program

Companies large and small face challenges keeping up with technology and harnessing its advantages. For an entity as large and diverse as Walmart, leveraging technology to allow better and faster business decisions required every resource and a team of professionals working together to create their success story, which is now just over 50 years old. Currently operating internationally in over 6,100 stores in 26 countries outside the U.S., standardizing and implementing global best practices in the area of real estate is enabling Walmart to utilize this information at all levels of the organization.

Brad Sill, Director of Systems & Strategy International Real Estate, Wal-Mart Stores, Inc. has been on the front lines of this interesting process since he joined Walmart in 1999. With a background in accounting and computer science, his duties began leading a team tasked with improving processes, procedures and systems in the property management area of the US Real Estate business. After moving to International Real Estate over nine years ago, he began working with the reporting, finance and systems teams, including a two-year global implementation of JD Edwards to international markets, until another opportunity became available to take real estate technology to another level within the organization.

"The challenge I was given was to look at other world-class real estate companies in order to determine what systems strategy we should look to adopt in taking our International Real Estate systems to a new level," explains Sill. "We just knew as an organization, with our size and portfolio diversity, we must operate differently



Brad Sill

in the future. We had to deliver a core set of systems and capabilities to all our international markets, utilizing the same technologies and business practices across the globe while still allowing localization where necessary. That is part of our Walmart Way of Working." All this while managing the other equally important duties of a program this large: vision casting, budget preparation & management, project management, change management, training, communications & support, all critical for success.

Going through Walmart's processes first before even looking at a single technology was key. Only then did Sill begin selecting business partners, gathering budget information and casting the entire end-to-end vision based on a full set of global business processes. "We did not want to start this long journey until we were convinced that we had about 80%+ of our processes covered by technologies we had selected," he states. "This was too large of an undertaking to have false starts."

The guiding principle since then has been to join with global technology providers, collaborating openly to keep them fully integrated, with advanced analytics and KPIs as a core part of the vision. "Partnering with the best is the absolute most critical success factor in my book," affirms Sill. "Our partners have become ingrained in our business. They have spent time in each of our countries learning our global business and the unique differences by market. They have looked into the eyes of our country teams, giving them a unique perspective to help build our solutions. Their industry knowledge and expertise were invaluable to both our vision and our success."

Executive leadership is another foundation for success, a process that is ongoing. "Like many corporate real estate companies, this is



not our core business," says Sill. "So often it is either ignored or left as a lesser priority in companies, which is understandable until it reaches scale and then becomes an obvious issue. Fortunately, with a portfolio so large, our leadership made this a priority and decided to invest in this area of our business." Leadership is maintained by an established Steering Committee that meets on a monthly basis.

There is also a Program Management Office responsible for the normal scope, budget, timeline, contract, and deliverable management; project status updates; and change, training and communication standards.

The results are proof of systematic planning and execution. Since 2010, multiple systems have been deployed in all 26 of their markets outside the U.S., with more than 2,500 users to date and growing daily.

What advice is offered for other corporate real estate organizations who are thinking of embarking on a similar journey? "I would say three ideas stand out," Sill responds:

1. View it as a Program, not a Project, a subtle but important distinction. "Taking on an entire Program such as this is not for the faint at heart. It takes tons of persistence plowing through the challenges to have success, but keeping a Program View (no matter the ebbs and flow of the individual projects) keeps you on target. Never forget why the Program exists, which for us is our country real estate teams. We wake up every day with that purpose in mind."
2. Select the right business partners. "We would not have achieved nearly this much or this fast without our world-class business partners. We do not look for 'vendors' but true partners, and there is a big difference between the two."
3. Collaboration, collaboration, collaboration. "Very early on, I set the bar high to openly collaborate among all business partners. They were asked to check their agendas and egos at the door and help us as an organization move the ball as far and as fast as we can together. In the true spirit of synergy I am happy to say we have accomplished this and we are all better off because of it and this is now ingrained in our Program culture. It is now the only way we know to work." •

## General Overview of Current and Ongoing Projects

**Project Management:** Tools to track the steps necessary to deliver on our Pipeline of new store growth goals by country, format, banner and type at both a milestone and detailed task level (corporately, as well as at the country level).



**Site Selection & Geospatial Analysis:** Tools developed to utilize country-specific demographic and trade area information to analyze and select the best possible store locations, as well as, advanced geospatial analytics for operating performance.

**Financial Analysis:** Tools developed to evaluate project/store financial projections and analysis in order to assist Real Estate Committee review and approval; while improving on our Post Opening Audit of projections versus actual accuracy & portfolio analysis.

**Design & Construction:** Tools developed specific to the D&C processes around document collaboration, capital spend management, bidding & change order management.

**Property Management & Facilities Maintenance:** Tools developed for Property/Lease Management (landlord receivables & tenant income receivables) and Facilities Maintenance after a store has their grand opening.

**Global Reporting & Analytics:** Reporting and analysis systems for Home Office, Regional and Country leadership in order to achieve faster, improved and more informed decision making, allowing for better portfolio management.

## GSA Introduces New Lease Automation Strategy

An interview with U.S. General Services Administration, Public Building Service's Chris Wisner, Assistant Commissioner, Office of Leasing, and Phil Klokis, Chief Information Officer

**G**SA, the nation's largest public real estate organization, provides workspace for more than 1.2 million federal workers through its Public Buildings Service. Approximately half of the employees are housed in buildings owned by the federal government. The other half are located in over 8,100 separate leased properties, including buildings, land, antenna sites, etc. across the country. More than 50 percent of those leases are for 10,000 square feet or less. The size and scope of this portfolio makes its management a daunting task.

With a goal to replace a legacy workflow automation system installed in 2005 that had become problematic and costly to maintain, the GSA team has embarked on deployment of a new lease technology solution that will provide cost savings, flexibility and nationwide standardization.



Chris Wisner

**REALCOMM: What got you started thinking about automating such a complex process as leasing?**

**Wisner:** The maintenance of paper files was time-intensive, compartmentalized and difficult to administer. The shortcomings of manual and paper-intensive leasing procedures led to the development of eLease, a workflow automation tool. In November 2005, eLease 1.0 was rolled out to the GSA regions to support daily leasing activities, advancing to a process augmented with technology and some level of automation. The new real estate technology system under development is the next logical step in leveraging modern IT architecture, business process management and managing organizational change in the PBS organization.



Philip Klokis

**REALCOMM: What are your primary goals for automating a lease? What made you decide to tackle something no one else has ever attempted?**

**Klokis:** The goals definitively are greater transparency, consistency in process and cost-effective outcomes. We started considering technologies, standards and best practices that would enable us to make this happen. We wanted to enable our users to

provide greater value to our client agencies by spending more time engaging with them to address their requirements as opposed to dealing with processes.

Others have developed automated lease acquisition software, such as Tririga, Skyline, etc.; however, unlike the

private sector commercial leasing, which is governed by state and local laws, the Federal government conducts leasing according to Federal law and acquisition regulations. Finding a commercial offering that meets Federal requirements would require such extensive modification as to be cost prohibitive. We carefully evaluated a number of approaches both based on commercial off-the-shelf, custom, and finally business process management, which we selected. Business process management is not a new concept, and has been used effectively in many other government and commercial organizations to gain greater business flexibility and efficiency.

**REALCOMM: Describe in detail how an automated lease will work. Will leases be stored as 'documents' (Word) or part of an automated system (database)?**

**Klokis:** Our goal this first year is to move more quickly with automated rules-based deci-

sion-making in the lease procurement process, such as document generation, data population, and submitted tasks for approval. Although the lease and its associated documents are stored in a word document/pdf format, the data that is used to build the lease is structured and reportable in our enterprise data system.

The lease process is automated by the business process management engine. Basically, from a user standpoint, the system prompts users to act on certain tasks regarding a particular lease. Users then claim tasks and act on them appropriately. It's almost like using automated tax software in that data relating to a lease is captured and reported in a structured form. This data is used for pre-filling documents (such as Word documents) and monitoring the performance of the leasing operation through key performance indicators. The tasks and data associated with those tasks are defined through a collaborative process modeling environment using IBM's Blueworks. Once the process flows and associated tasks are completely modeled and approved, we implement those in our business process management engine, which is what provides the user interface and task execution environment. In this case, we selected Appian.

**REALCOMM: Will multiple people be able to access, view, and edit the lease? How are changes handled?**

**Klokis:** The data in a lease document is captured by various users executing tasks in the appropriate sequence. From that standpoint, multiple people contribute to editing the lease document.

The system restricts users from accessing sensitive data in the system such as lease documents with strict access control mechanisms based on roles and involvement with individual projects.

**Wisner:** The business process management environment allows us to make rapid changes to business processes. The new lease technology system has a clause-builder function that allows us to manage individual lease clauses within documents such as Request for Lease Proposals and lease documents very efficiently. This will significantly reduce the amount of time needed to revise Request for Lease Proposals and lease documents to reflect policy changes.

**REALCOMM: How much will somebody be able to change the terms, or are you going for standardization?**

**Wisner:** GSA's national lease policy governs the ability to change the terms of certain clauses while requiring others, since many of our clauses are required by statute. The clause-builder allows Leasing Specialists to change certain clauses and, in some cases, remove some clauses altogether. However, we are striving for nationwide standardization and, with the launch of the new lease technology system, we will be monitoring the use of various clauses and allowing us to adjust the system appropriately. It's an ongoing process.

**REALCOMM: Will you have different strategies/systems based on the size and complexity of the lease?**

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**Christopher Harman**  
Founder and CEO  
Rail Yard, Inc.

*"Once a 'perk', advanced connectivity is now a 'must have' to attract tenants."*

## How Building Connectivity Drives Asset Value

Not long ago, office building valuations were primarily influenced by competitive rental rates, a convenient location, and ample parking.

But with the consumerization of the Internet, and the 24/7 desire to be wired, advanced connectivity—such as streaming media, phone, WiFi and video conference service—has become a basic necessity for almost every business.

### Once a 'perk', advanced connectivity is now a 'must have' to attract tenants

Today, tenants expect high-speed advanced connectivity when considering a commercial space. And not just from one provider, but multiple providers. According to Comcast's 2011 State of Communications Services in Commercial Real Estate Survey of nearly 500 U.S. commercial real estate building owners and property managers, over 90% say that access to advanced communications services is the most important selling point (behind only price, parking and location).<sup>1</sup>

"Internet access is very important and the higher quality the service and the more services offered, the better," says Rick Grimm, Senior Property Manager at Cypressbrook Management Company in Houston.

The July 2012 issue of the Cornell Real Estate Review states that demand for office space will be increasingly driven by the availability of infrastructure to support companies' technology requirements. Offices with access to this technology infrastructure are best positioned to perform well in the digital economy.<sup>2</sup>

### The race is on: gaining competitive advantage with advanced connectivity

Advanced connectivity has become so crucial, in fact, that cities and states across the nation are now locked in a high-stakes race to improve

*The Rail Yard platform of services enables building owners and managers to provide advanced connectivity to their tenants without the hassle of managing multiple technology vendors. Learn more about how to bridge the 'fiber gap' and get your building powered by Rail Yard at [railyard.com](http://railyard.com).*

broadband capabilities to keep and attract business, boost economic growth, and create jobs.

New York City is home to a range of industries such as finance, fashion, media, real estate,



technology, and telecom. In the past year alone, several big names in the tech sector including Facebook, LinkedIn, Twitter, Skype, and other key technology companies have opened offices in the city.<sup>3</sup> In an effort to keep businesses coming, Mayor Michael Bloomberg announced in 2012 a suite of new initiatives to expand broadband service,

which include a competition to build out fiber wiring for commercial and industrial buildings, and a crowd-sourced digital map highlighting wired buildings citywide.<sup>4</sup>

"Broadband is the infrastructure of the modern age and a basic necessity not just for tech businesses, but for every business," says Deputy Mayor for Economic Development Robert K. Steel. "These initiatives will harness market dynamics and create increased transparency to incentivize the private sector to expand New York's broadband infrastructure."

More than one third of respondents in the Comcast survey stated that the topic of access to advanced communications services is raised in 75% of negotiations with prospective tenants and 61% reported that having advanced communications in their buildings provides them with a competitive advantage. As a result, many property owners and managers are expanding their connectivity options and using these technologies to gain a competitive edge and as a marketing tool for attracting and retaining tenants.

### Mobile demand grabs headlines and influences strategy

Thanks to initiatives such as Qualcomm's '1000x Data Challenge', IT strategists are looking at innovative new ways to squeeze every drop

of bandwidth out of existing systems supporting mobile data traffic. By taking a deep technical dive into analyzing exactly how bandwidth is being used in a building and where congestion may be occurring—whether it be voice, video or data transmission—connectivity can be managed and allocated more efficiently. This involves a second look at existing licensed models, which often have underutilized bandwidth that could be reallocated, as well as examination of every piece of the data pipe to assess how traffic can be moved better, faster, cheaper. In addition, large quantities of 'neighborhood' cells are being deployed in commercial buildings to accommodate increasingly high demand in a dense indoor environment.<sup>5</sup>

IT executives across the country have shelved their plans for handling steady year-over-year growth in bandwidth demand and are instead setting their sights on how to address the 1000x increase that is fast approaching. Nevertheless, at the end of the line—or at the base of the tower—this mobile demand must be supported by a robust network infrastructure, ensuring that 'advanced connectivity' will continue to be a key factor in IT decisions, whether they be made at the city level or within a commercial building.

### Access to multiple providers offers choices, mitigates downtime

Cloud computing and services development over the coming years will constitute the bulk of all IT-related spend domestically and across the globe. In 2015, public IT cloud spend is expected to reach \$72.9 billion, accounting for 46% of net new growth in overall IT spending in five key product categories—applications, application development and deployment, systems infrastructure software, basic storage, and servers.<sup>6</sup>

With so much riding on the ability to access the cloud and stay connected, businesses demand a safe, secure, and robust fiber connection to mitigate network downtime. In the digital economy, even short periods of network interruption can result in a host of adverse consequences, such as lost sales, slow response times to customer needs, and general loss of productivity.

Tenant access to multiple providers on site is fast becoming a crucial element to the connectivity infrastructure. According to the Comcast survey, one out of two respondents say that providing multiple service provider options positively impacts occupancy rates by up to 19%. Commercial spaces with multiple providers

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## Global Innovation and the Need for Realignment



**Geoffrey Kasselmann**  
SIOR, LEED AP  
Op2mize, LLC

*"As other places in the world strive to harness new technologies, resources, strategies and philosophies in order to better compete and stake their respective global claim, a sort of digital divide has been created."*

If you attend Realcomm in June, or if you have been to any recent Realcomm event including IBcon or CoRE Tech, then you know firsthand that the highest level

discussion and debate that takes place revolves around global innovation. Innovation as a key driver of economic growth, job creation, and rising quality of life: who leads this charge? Which countries rank highest? How is that ranking achieved? What are the implications? How do those global results affect us?

Here in the U.S., global innovation is alive and well. Sort of. The land that gave us Thomas Edison, Henry Ford, Alexander Graham Bell, the Wright Brothers—and countless others past and present—continues to show examples of global-scale innovation in obvious and obscure ways. Today's players range from kids with a laptop and internet, to Shark Tank contestants, to tech incubators, to GE.

Yes, that GE, the same one that has been innovating in America and around the world for generations. In recent times, they have been surveying global executives for their innovation viewpoints, perceptions, and business influences, culminating in an analysis called the GE Global Innovation Barometer. Here is how GE describes it:

*The GE Global Innovation Barometer, now in its third year, explores how business leaders around the world view innovation and how those perceptions are influencing business strategies in an increasingly complex and globalized environment. The Barometer is an international opinion survey of senior business executives actively engaged in the management of their firm's innovation strategy. It is the largest global survey*

*Geoff Kasselmann is the President and CEO of Op2mize, a real estate services firm that uses Sustainable Intelligence™ to craft innovative and energy-efficient clients solutions. Geoff is a LEED AP, a Cisco Systems Registered Partner, an IBcon Advisor, and an accomplished author and public speaker.*

*of business executives dedicated to innovation.*

When time permits, you will want to roll up your sleeves to study this trove of insightful and comprehensive information. Be sure you



have some time to think through the implications of what you read and see. Keep in mind the astounding amount of time, effort and resources that went into this research. Without giving away too much, suffice it to say that the U.S. is not alone in the pursuit of global innovation, nor does the U.S. sit atop of the range of results on

an international scale.

Is the U.S. competitive? Yes. Is the U.S. amongst the global leaders by most measures and metrics? Not even close.

So who is, you ask? Well some of the more notable players in this year's survey include (in no particular order): Mexico, Malaysia, Ireland, Nigeria, Poland, Turkey and Brazil, just to name a few. The usual suspects are in there too, just not where you might think.

The implications of this research, projected out over years or even decades, are at once somewhat obvious and obscure, perceived and real, certain and uncertain. As other places in the world strive to harness new technologies, resources, strategies and philosophies in order to better compete and stake their respective global claim, a sort of digital divide has been created. Those with an alignment of interests, primarily digital in nature, growing apart from those mired in the ways of yesterday, primarily analog in nature.

I've actually experienced this global phenomenon firsthand. In January 2004, I joined a handful of other Realcomm community members, led by Jim Young, on an exploratory

smart building field trip to Asia, with several stops in China. We all wanted to 'parachute' into Asia (China in particular) and see what the fuss was all about.

It turned out they weren't building smart buildings after all. They were building smart, connected CITIES.

But that's not all. They were using digital tools to educate their children to be engineers and entrepreneurs. They were empowering younger, highly-educated, digitally trained and entitled decision makers to use digital technology and information to make BIG decisions for the subsequent digital generations who were coming right behind them. This was an unprecedented alignment of digital interests and abilities that no one expected to see on such a widespread basis. And this was in 2004.

I've since been back to China in 2005 and again in 2011. I've been to over a dozen different Chinese cities in multiple regions of that massive resource-rich land, each possessing an unmistakable blend of energy, culture, growth and alignment that can only be fully appreciated with the benefit of first-person exposure and hindsight.

Today, China has 'jumped the shark' by nearly every relevant metric. They are not without notable socio-economic challenges, including human rights issues, hyper-growth, excessive pollution, and the real-time global education and awareness of their new middle class, who is migrating to the big city in droves. Yet they build 30-story commercial buildings in 14 days. They graduate 500,000 engineers per year (compared to 50,000 per year in the US). They build SMART CITIES with an eye to the future.

So imagine a time where China and the U.S. rank merely in the middle of the cluster of countries on the global innovation stage. Imagine a world where other places, no matter how small or remote or previously overlooked, can out-flank and out-position the presumed dominant players through sheer desire, nimbleness, necessity... and an alignment of unprecedented digital interests and resources.

Well there is no need to imagine (despite the GE tagline to the contrary). That time and place is NOW.

Back here in the U.S., we can be proud of the technology, innovation and energy economic trends that have been clearly established as sure signs of global competitiveness. Organizations big and small, public and private, even federal and

local governments are starting to realign their decision-making and assorted budgets and resources in order to compete more effectively on a global scale.

To this end, Gartner has recently predicted that by 2017, the CMO will spend more on IT than the CIO, and IDC predicts that what it calls "the line of business executives" will control 40 percent of IT spending by 2016. This is the C-suite coming together in new and different ways, to re-align, in the name of innovation.

What does it all mean? Of course that depends on your perspective, where you choose to live, what you hope to accomplish in life, what you want for your kids, what you want your legacy to be. I, for one, will be in Orlando in June, and otherwise engaged with my Realcomm community friends and peers, to discuss and debate this ongoing phenomenon.



### GE Global Innovation Survey

This year's Barometer examines what factors business leaders believe to be drivers and deterrents of innovation and analyzes specific strategies and policies that enable innovation and drive growth.



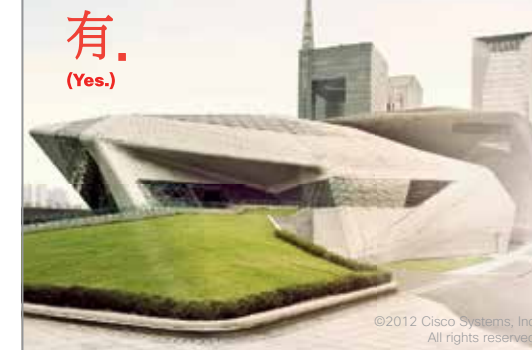
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## The Benefits of an Integrated Mobile CRM System



**Robert Teel**  
Yardi

*"Many commercial real estate companies are discovering that a built-in CRM system, complete with mobile capabilities and designed for real estate, within the core property management system, offers the best technology for shortening leasing lifecycles and driving revenue enhancement."*

**Y**ou are an overloaded internal leasing agent chasing a large number of renewals after the year-end holidays. Collecting the information you need to proceed with each tenant is overwhelming. OK, so the primary contact's phone number and email is easy enough to find in your generic Customer Relationship Management (CRM) application. But the dirty work involves tracking down the details. First you need to search through the file cabinets for the lease hard copy to look for option details. Unfortunately, you don't have options and encumbrances pulled into CRM from your property management database. And it would be easier to find the full lease document if your company had scanned the documents into a document management system and indexed them for easy searching. Next, you need to call Accounting to find out if there are any open AR balances because your CRM system isn't integrated with the property management data. Finally, you need to update the budgeting and forecasting team with your pipeline...this annoying task involves marking up a printed spreadsheet with expected deals and market leasing assumptions.

Fortunately for those who have endured the above scenario, the explosion of real estate-specific automation tools of the last several years (e.g., property marketing, online tenant services and rent collection) has extended to CRM as well. CRM systems designed for real estate provide a single view of customers and contacts in a common global database for the entire organization. Accounting, sales and administration can all view the same lease information in real-time, which creates opportunities to close deals more quickly and shorten cycle times for processes like budgeting and forecasting. Fur-

thermore, the value of information sharing can't be underestimated when it comes to details like tracking leads, customer interactions, leasing milestones, tasks and other crucial information contained in documents, emails and other media. Providing a high level of service is not possible when departments aren't sharing interactions and status.



Generic CRM systems might seem like an attractive option, as they allow commercial property managers to create a system by selecting a la carte from a large 'menu' of configuration

elements designed to be customized for any industry. However, this kind of a contact-and-deal system is vulnerable to inefficiency and error, as it requires interfaces among various computer programs, spreadsheets and paper records. When multiple people are involved in a deal, one or more of the principals may be left unaware of the most recent activity because of the inherent delay of using disparate, inefficient systems; and they might forfeit opportunities to execute lease extensions or match available space with tenants who need it. Similarly, sales people might see the contact database, but accounting or lease administration information may be maintained elsewhere.

Many commercial real estate companies are discovering that a built-in CRM system, complete with mobile capabilities and designed for real estate, within the core property management system, offers the best technology for shortening leasing lifecycles and driving revenue enhancement. Such a system makes all pertinent information available—lease and lead tracking records, rent rolls, financial reports, property management data, contacts, correspondence—to anyone requiring it, whether they be brokers, leasing agents, or managers.

*Robert Teel is senior vice president of Commercial & Investment Management for Yardi. He oversees the product direction and development of Yardi's investment management, international and commercial product lines.*

This expedites deal approvals, as property managers or asset managers need pertinent, up-to-date information to approve any aspect of a deal.

"Being able to integrate our CRM activities with our accounting system eliminates the duplicity of effort that's common with a typical CRM system," said Larry Webb, sales and leasing broker for Clark Commercial Group of Kailua-Kona, Hawaii. "When separate systems are used, even simple entries such as contact information require people to log in to another system and manually enter the data. With an integrated system, everything, including the terms of a lease, can be integrated seamlessly."

A built-in CRM system offers the advantage of less interface time when collecting complex information about leases and deals within the property management system. Leasing agents and others can see upcoming option and renewal option milestones. Emails automatically upload to the property management system, eliminating multiple logins and data entry and offering a clear view of the pipeline and historical data. With automation eliminating the need to rekey, information in the database is both more accurate and presented in a format that is compatible with the property management system, outcomes that often are not possible with a generic CRM system. In addition, the convergence of the leasing pipeline with the property management system means that, when a lease is executed, the deal record converts automatically to a tenant record without reentry of data.

A built-in system also provides deal templates that are captured in the property management system, saving staff the time and effort involved in customizing the laborious deal entry that characterizes generic CRM systems. Integration with the budgeting system allows deals to be compared with the budget for the space to determine if the deal meets revenue projections. Generic solutions often aren't designed for real estate and fail to capture the essential data points needed to complete a deal.

As a further example of the benefits of a built-in system, a comprehensive record of all actions and communications with the tenant, including AR aging information, is available in real time. Property management companies can evaluate a tenant's payment history and other pertinent information to make an informed decision about whether to renew the lease, or perhaps under different terms.

Such a system can also be a principal tool for enhancing relations with existing tenants and meeting compliance obligations. The correspondence and meetings that comprise a company's history with a tenant can be tracked. CRM can be used to extend optimal operational communication with tenants. For example, workflow triggers and notifications ensure that tenant interac-

tions such as tasks, events and correspondence aren't forgotten, and the necessary follow-up is done. Managers can use CRM to reassign tasks to another employee if the leasing agent or manager is unavailable for a specified event or time, increasing tenant satisfaction.

Mobile accessibility adds an added dimension of convenience to an integrated CRM system. The most advanced CRM systems allow a complete view of activity by providing direct access to the property management and CRM data on an iPad, iPhone or other mobile device. Brokers visiting their properties or other locations can pull up property management data right on the spot, along with leads, deals and leases, quickly and seamlessly.

Tenants often look months or even years ahead when making their leasing plans—and they're increasingly inclined to conduct business on the move. Brokers, property managers and others involved in the deal pipeline can gain distinct advantages with a built-in, mobile approach to CRM that will let them keep pace with the market, retain clients and recruit new tenants. •

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BUILDING AUTOMATION ALLIANCE

## Data Outsourcing & Business Intelligence Looking Beyond The Horizon



**Mike Basile**  
Hipercept

*"Can you look at a consolidated report and know where everything came from?"*

### The Information Nightmare

The nightmares begin with users being bound to silos, disparate systems, and legacy software that they simply refuse to give up. Excel spreadsheets are scattered on shared network drives. Individual's hard drives destroy your information landscape, despite the countless emails singing the virtues of adhering to policy. The frustration within upper management rises because they cannot seem to get a consolidated portfolio report that makes sense. So what do you do? You consider outsourcing.

### Why Outsource?

In this time of economic uncertainty, corporations do not want to make long-term commitments to full time employees. The soaring cost of health benefits, 401K's, administration, and real estate have made middle office employees much more expensive and at times, cost prohibitive. Utilizing an effective outsourcing model with a qualified vendor allows for the rapid scale up or down of resources virtually on-demand. Compared to a traditional hiring cycle of searching for the right employee, you could be months ahead of the game using an effective outsource strategy. Outsourcing can leverage best practices that are more difficult to achieve in a large global corporate environment. Outsourcing can lead to attaining a greater expertise, lower costs, and higher quality. It can also free up top in-house talent and allow them to focus on more strategic corporate endeavors. These outsourced resources are an extension of your company and are sometimes referred to as the extended enterprise.

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### Business Intelligence & Why You Need It

Business intelligence (BI) is no longer an optional convenience in an overall corporate strategy. In this market environment BI is becoming a critical component of successful businesses.



Technology professionals are under increasing pressure to operate more effectively. There is a growing focus on streamlining operations and reducing costs. Relying on a stitched together package of manual Excel spreadsheets does not cut it anymore.

The industry is starting to understand that data itself is useless. However, when you have the ability to organize

data into information, then you have a valuable commodity. Business Intelligence is the pathway to turning data into information. Strategic decisions can be made with a high degree of confidence when there is information to support them. Can you look at a consolidated report and say where everything came from? Most large corporate companies cannot.

### An Outsourcing Case Study

A large insurance company with a sizable international portfolio comprised of direct real estate investments, debt, and CMBS derivatives was having great difficulty in normalizing and summarizing their risk exposures. Disparate systems, timing issues, and FX fluctuations complicated this problem. Their resident Business Intelligence team (comprised of all internal funded FTE's) was unable to deliver the analytics required to manage this business accurately or in a timely fashion. Delays and cost overruns were the norm.

Consider also the pressures involved regarding the internal political ramifications of this

team operating in a large company construct. Team leaders were hesitant to aggressively realign staff, as that might be considered to be a negative reflection of their own management abilities. So the team struggled on, and as a result, productivity further eroded.

With an annual internal seven-figure run rate, excluding benefits and other incentives, the insurance company could no longer substantiate the cost involved, nor the risk factors associated with reporting inaccurate data. Clearly, they were a prime candidate for a managed outsource strategy.

The company engaged a BI outsource firm with extensive domain experience in real estate and alternative assets and was able to move this critical reporting function exclusively to them. As a result, they reduced their operating costs by half. The political pressures that hampered progress were now alleviated, as the company was now able to hold their vendor accountable.

The key to this scenario was the successful integration of the vendor into the internal workflow process. They brought them into their internal trouble ticket system, included them in all conference calls, and made them feel like true partners in the development effort. With vigilant monitoring, integration does not have to be a painful transition.

### The Steps

**Strategic Assessment**—Decide why, how, and in what form the

outsourced service supports your business strategy. Sometimes components may be better suited to being retained internally. Not everything is a candidate for outsourcing.

**Business Case Development**—Why am I doing this? Will this be worth it? The answers will come from analyzing expected cost savings and other financial and operational benefits of the initiative. Hire an experienced consultant to help you.

**Vendor Selection**—If you think you are choosing a vendor, you have already failed. You are choosing a strategic partner. Keep in mind that big is not always better. Small and mid-sized firms might give you more personalized service.

**Contracting**—Make sure it captures the needs and expectations of both parties. Compliance and risk factors must be addressed in detail.

**The Big Transition**—Actively monitoring the migration is the name of the game here. Strict measurement of initial performance will stave off risks that could pop up down the road. Be aware that failure to proactively manage this phase of the implementation of the outsourced service could lead to decreased service levels, cost overruns, compliance difficulties that were not contemplated previously, the need to switch vendors, or—worse—bringing the past service back in-house. Alternatively, a well implemented outsource transition will deliver cost savings and newfound flexibilities of a scalable resource pool. •

## Is Your Data Keeping You Up at Night?

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**Chris Saah**  
President  
TecFac

## Is Your Business in the Cloud?

*The power of collaboration can be a great tool in solving the technology issues that we all struggle with. Featured below are brief, informal, 'water cooler' conversations I've had with some of the most innovative technology professionals in our industry on how the cloud is being used in their organizations.*

*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](http://www.twitter.com/csaahcio).*

**W**ith the provision of cloud-based services maturing and expanding by the month, one common question is creating a big buzz 'in the trenches': "How much should I utilize XaaS?"

The analysis can be daunting, as with any major paradigm leap. It is made even more so by the constant change in the type and level of services being offered and the ROI model for each. Here are a few elements that might be helpful to keep in mind.

**Total Cost of Ownership** A quick cost survey of servers and software will often lead one to believe it is cheaper to build than to buy, but TCO is not just a sales technique used by vendors. Be sure to quantify monitoring, maintaining, and administering your in-house systems. Another consideration is the expertise required to properly run your system. In smaller shops, your IT generalists may find it hard to stay current on all of the platforms you run. Finally, think about the opportunity cost of using your limited human resources to manage generic services that could be better done by others, leaving your staff to focus on needs more closely aligned with the idiosyncrasies of your operation. You can't buy institutional knowledge.

**Agility/Scalability/Billability** The advantages of activating 20 phone lines with Lync service or spinning up a server in an hour can be huge, especially in our industry's rapidly changing environment. Additionally, being able to have a well-defined cost per seat or platform makes it much easier to allocate that cost to a busi-

ness unit, subsidiary, affiliate, or owner. That fact, combined with the elimination of capital expenditures, can make it much easier to get approval for new services, especially when they may be optional or discretionary. You no

longer need to wait until adoption reaches critical mass to get a project approved. You can roll it out incrementally to those who want it, and add new users as adoption grows.

### The Myth of Geo-Redundancy

The purists among

us associate the cloud with geo-redundancy, but those days are long gone. The term has come to mean virtually any service delivered over any network, hence the terms 'private cloud' and 'hybrid cloud'. Don't assume that just because you are looking at services from top tier providers that this kind of reliability is being offered. Ask. (In most cases you will find it is not.) Witness the failure of Amazon's Elastic Compute Cloud US—East 1 and the resulting outage of Netflix, Instagram, and Pinterest in 2012 due to the major storms that devastated the east coast. The expenditure to build in geo-redundancy may double the price of a service. That service may incorporate as many, if not more, levels of redundancy than your on-premise solution. But you cannot assume survivability, and DR/BC planning has to take into consideration the capabilities of the services you purchase.

So whether you're considering backing up data to a cloud service or moving your environment to an XaaS service, 2013 may be the right time to leverage the wide variety and ever-growing cloud menu offerings, move some of the basic functions off your plate, and spend more time adding value to your business.



### Cloud Use Studies Cases

Following are several examples of how the cloud is being used within our industry from technology folks out there "in the trenches."



Kevin M. Moss

Kevin M. Moss, Senior Vice President of Information Technology at DDR, is thrilled with the possibilities that lie ahead for their ever-evolving cloud-based solutions. "Our largest venture into the cloud has been with Salesforce.com and it has become a point of convergence and a common interface where we can leverage the power of ERP, ECM, and BI in helping our people be entrepreneurial at the point of customer contact. Cloud applications have definitely improved our time-to-market for new functionality and have greatly contributed to an increased level of engagement between the business and IT."



Stuart Appley

Another Salesforce proponent is Stuart Appley, CIO of Shoreline Properties. "We went live on Salesforce for our Investor Relations and Executive departments and it's been extremely well received," reports Stuart, who is embracing a number of SaaS solutions. "We continue to use Cloud services extensively as we have seen very positive results from our use of SaaS over the last 5 years. We migrated the whole company to Office 365 this year, with very little disruption and have been very happy with it. They host our email and Lync services, and we plan on moving our on-prem Sharepoint installation to them next year. We also went live with Chatham, a SaaS Loan Database that is now our system of record for all our Mortgage, Fund and Corporate Debt. We continue to use other SaaS products, including Workspeed, Angus, Nexus, ADP, BCS and other benefit related services."

Shoreline's cloud foot print is not limited to SaaS. "We expanded our IaaS services to include Microsoft application testing, using Skytap, in addition to our current GoGrid services, which we use for hosting our Nexus test and development environments. We also moved all our offsite long-term data backups to Amazon this year, eliminating our tape backups and Iron Mountain services. This year, we will be moving to DRaaS, using a cloud provider for Disaster Recovery. We're excited about that project, as it will let us remove all internal DR related capital and maintenance." Having seen the benefits to the business, Stuart has long-term plans to move as much of their systems as possible to the Cloud: "Embracing the Cloud has enabled us to reduce our capital expenditures, while also freeing up internal resources to work on more business critical and value-add projects."



Ryan Allbaugh

Others take a more metered approach to the adoption of cloud solutions. In his blog post, *Hey You, Get Off My Cloud*, Ryan Allbaugh, CIO at Childress Klein, identifies the need for BI as a key factor for determining cloud fit. Cost is, of course, another key factor:

"We have had a good number of successes with SaaS including Angus Anywhere (GREAT company to work with), and some others, but I think more importantly, we have had even more projects where we identified it was not a good fit due to some reason or another. It usually came down to cost of ownership (we are heavily virtualized so additional hardware costs are usually nil or very low)."



Paul Quinn

For Paul Quinn, collaboration with broader audiences is the criteria he uses for determining which of the applications at Duke Realty he'll place in the cloud. Paul's examples include job postings, for greater exposure to applicants (and for interacting with applicants), accepting and processing resumes, for access to subcontractors (and subcontract bidding), vacant space listings, for access to prospects, for utility bill processing, insurance certificates, and for business process expertise.



Art McCann

"I believe putting everything in the cloud does not make business sense for all applications or processes," says Art McCann, who warns against moving to the cloud just for the sake of doing so. "If I was starting a company and wanted my incremental IT costs to rise with my revenue, I would go this route. For an established company you should evaluate very carefully. For example, if you have terabytes of backup tape storage and you want to move it to the cloud, you could spend around \$100,000 monthly and be able to tell your boss 'we are in the cloud'. On the flip side, you are spending way too much on your backup solution. Don't get caught up in the hype and marketing buzz of cloud solutions!"

At Highwoods, where Art is CIO, he uses a 'Selective Cloud' approach that identifies applications or processes that require frequent software updates, extensive IT time for care and feeding, and frequent hardware upgrades. "One good example is our HR System for payroll and workforce management. The system required extensive IT time (tax and regulatory updates) to keep it up-to-date and the hardware requirements were changing frequently. We decided three years ago to put the application in the cloud with our software provider. We had many discussions about data security and the contract has very strict penalties if there is a data breach."

McCann's approach summarizes a truth embraced by all of our contributors: "Bottom line -the 'Selective Cloud' approach is more scalpel than hatchet. Find the applications that drain your time and money and consider them for the cloud where mature offerings exist." •

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**Wisner:** We will be using the new lease technology system for all lease types. We have various lease models that address the varying sizes and complexities of the projects. The system implements these models through pre-defined business processes: Simplified; Streamlined Lease; Succeeding/Superseding Lease; Standard Lease; and On-Airport. The system also has the flexibility to add new lease models as lease and business processes evolve.

**REALCOMM:** Tell us about time and cost savings. How much faster will you be able to execute a lease? Do you have estimates on financial savings?

**Klokis:** We currently monitor our lease execution speed through a Lease Cycle Time Report. The new system will be able to measure cycle time and many other metrics at a much more detailed level. Our hope is to have significant improvements in Lease Cycle Time; however, we are not able to forecast the extent of Lease Cycle Time improvement at this time. The new lease technology system will give us the data so we can make data-driven decisions on how to optimize the process, or where to invest to increase the speed of the lease process and value to our customers.

As far as time, we are looking at two different metrics on time and financial savings: 1) IT Savings, which are composed of development, modernization and enhancement costs and operations and maintenance costs. These savings are tangible and are measurable at this time; we are forecasting a reduction of 33 percent in development, modernization and enhancement costs, and 2) Business Savings, which will be highly measurable once the system starts reporting on business metrics.

In addition, we are seeing many ancillary benefits in both areas, such as increased flexibility for system change, consistency of user experience across diverse systems, more time for requirements gathering, nationwide leasing process standardization, reduced cost of business-driven change, and many more.

**REALCOMM:** Do you think the industry will follow your lead? What are the major obstacles to a successful implementation?

**Wisner:** Although PBS has distinct rules, regulations, and an organizational structure that is different from the commercial sector, we believe that this approach embraces the various technologies and standards currently in industry without displacing them and will influence industry business practices. The biggest obstacle to a successful implementation is change management. GSA's vision for the next lease technology solution is vastly different than the approach to systems our end-users are accustomed to. We anticipate a learning curve as our regional offices move toward more nationwide process standardization and away from regional business process variances. GSA will support staff with training to overcome these challenges.

**REALCOMM:** Who is helping you develop this platform (internally and externally); and when do you expect to roll out your first pilot?

**Klokis:** Internally, we are working with our own Office of the Chief Information Officer, and externally, we are working with Incentive Technology Group, LLC. We will begin implementing the application sometime in late spring or summer of 2013.

**REALCOMM:** What was the reaction from your organization when you suggested this project? How will you drive the organizational transformation necessary for the new processes?

**Klokis:** Response was generally supportive for a change to the current system. Managing enhancements to the eLease application had become so costly and cumbersome, that there was broad consensus for the need to replace it. We were able to clearly demonstrate lower life cycle costs, greater development and application flexibility, and, ultimately, support to the end-users. In general, the organization is positively disposed toward the new lease technology system.

**Wisner:** Our hope is that the process that is instituted by the system itself will drive the organizational transformation for any new process. That is the experience of business process management implementation in other organizations. •

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offer tenants more choice, needed redundancy, and a more competitive environment in which to purchase services. In addition, the availability of multiple providers offers tenants the flexibility to change services to accommodate evolving business needs.

Yet despite year-over-year increases in telecom penetration within the U.S. commercial market, 68% of commercial buildings with 20 or more employees still lack access to direct fiber connection<sup>7</sup>. For building owners and managers, this 'fiber gap' represents a strategic opportunity to keep and attract tenants and gain competitive advantage by offering advanced connectivity from multiple providers. •

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## LED Lighting: Impacts of a Disruptive Technology

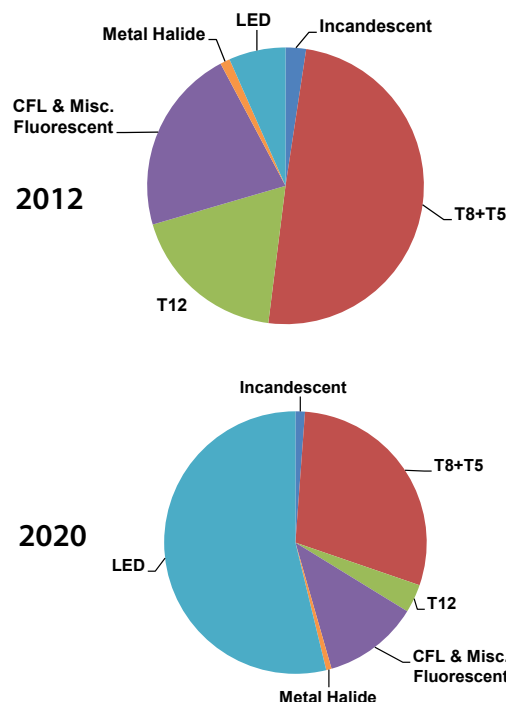


**Jesse Foote**  
Research Analyst  
Navigant Research

*“With LED prices continuing to fall and quality improving every year, building owners might justifiably wonder when the time will be right to invest in this new lighting technology.”*

While few people currently work in offices that are lit by light-emitting diode (LED) lamps, it's likely that a significant percentage of commercial building space in the United States will be lit by LEDs within just a few years. Penetration rates are forecast to range from 20% to 65% by the year 2020. Specifically, the Department of Energy (DOE) forecasts that 36% of lighting will come from LEDs by 2020, increasing to 74% by 2030. This change is even more drastic when looking at newly installed lights in construction projects. Navigant Research forecasts that the LED share of lighting in new construction projects will rise from 6.5% in 2012 to 53% by 2020, as shown in the charts below.

Commercial Share of Lighting Type for New Construction: 2012 and 2020



Source: Navigant Research

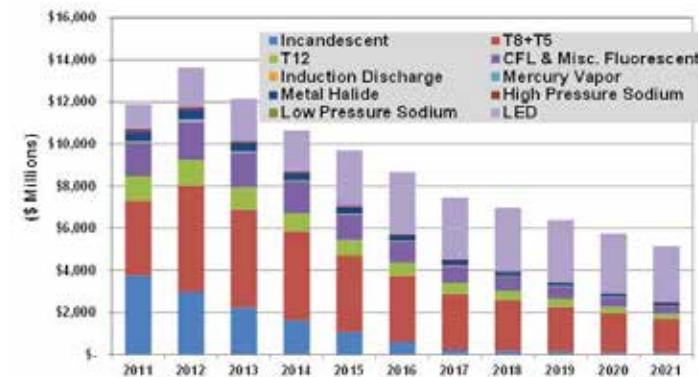
Jesse Foote is a research analyst contributing to Navigant Research's Smart Buildings program, with a focus on energy efficient lighting technologies. He has extensive experience analyzing and implementing a range of green building innovations. For more information, visit [www.navigant.com](http://www.navigant.com).

The rationale for this rapid shift is well known. A May, 2012 article in *RealComm Edge* (“The Future of LED Lighting Market Looks Bright”), described the advantages that LEDs already hold over incandescent and compact fluorescent lamps in terms of life span, efficiency, heat emission, temperature sensitivity, color quality, and dimming capacity. Linear fluorescent lamps still compare somewhat favorably to their LED equivalents, but new LED products have begun to overtake this mainstay of office lighting as well. More importantly, technology developments continue to improve the efficiency and quality of LEDs even as costs continue to fall.

While the reasons for this sea change in technology may be widely understood, the consequences of the disruptive impact on the lighting industry are less clear. Many smaller lighting companies with a focus on LEDs stand to prosper. All of the larger lighting companies are scrambling to make sure they are well-positioned for the rise of LEDs, but it turns out that this will not be enough. The problem is that longer-lived LEDs will mean fewer sales of replacement lamps. Total revenue from lamp sales, including new and traditional technologies, will decline. In commercial buildings, for example, Navigant Research forecasts that lamp revenue will decline at a compound annual growth rate (CAGR) of -8% through the year 2020. This decline will take place even as revenue from LED lamps increases, as shown in the chart on the next page.

The big lighting companies all recognize the threat of a shrinking lamp market. Even more than the transition to a new lamp technology, this threat has become a significant disruptive force in the industry. The outcome will have big impacts on the products and services offered to building owners, who will view this shift as overwhelmingly positive.

Commercial Lamp Revenue by Lamp Type, World Markets: 2011-2021



Source: Navigant Research

### Controls

LED lighting naturally lends itself to greater controllability. For big lighting companies looking for new opportunities to expand, lighting controls are an obvious target. Just like the tech giants of decades past, such as HP and IBM, had to make the fundamental shift from hardware to software/services, today's lighting giants are becoming providers of complete lighting solutions rather than just the physical elements that emit the light. A prime example of this is the new go-to-market strategy being rolled out by Philips Lighting. The numerous brands that company has developed or acquired now include everything from lamp components through to enterprise software. Those brands are being unified so that Philips can offer soup-to-nuts solutions to meet a wide range of customer needs.

While external factors, such as stricter building codes and a focus on efficiency requirements, are helping to drive the adoption of more advanced lighting controls, this determined entry by the lighting giants may prove to be the biggest game changer in terms of bringing quality products into widespread use. Some exciting developments in the controls arena that have already begun include:

- **Integrated sensors**—With more lamp and luminaire vendors also selling sensors and controls, these products will be integrated in a more complete and seamless way.
- **Improved wireless communication**—Comprehensive solutions from established lighting companies will reduce the risk (perceived or real) that customers could end up with equipment that does not communicate well.
- **Easy, building-wide control**—Smaller start-ups have generated a host of creative ways for building managers to visualize and control the lighting across their buildings. Integrating this software directly into the lighting products from the start will greatly increase the number of actual users.
- **Convergence with HVAC**—As lighting companies look to

expand their product offerings, integration with other building-wide controls is a logical next step. While this capability is already being offered by numerous vendors, very few customers actually take advantage of it. Big lighting companies that see themselves as service providers will change this landscape.

### Product Diversification

The disruptive impacts of LEDs on the lighting industry will also include an explosion in product choices. Currently, lighting companies report that the overwhelming focus of research and development money spent on LED lighting is aimed at bringing down the high cost of these products. Costs have been dropping dramatically year after year, as much as halving in recent years, but must fall further before widespread adoption will take place. The DOE forecasts an additional 80% reduction in the dollar per kilo-lumen cost by the year 2020. At some point in this period, the payback period for the upfront costs of LEDs will meet even the strictest corporate requirements. At that time, competition between lighting companies will shift. Rather than simply competing to have the cheapest product, companies will have to compete on functionality and beauty. Two developments to expect:

- **Breaking the light-in-ceiling model**—Lighting designers already hate being required to bury a 100% downlight within a dropped ceiling panel. With improved directionality and miniaturization, LED lighting will offer a huge range of alternatives. One presenter at the February 2013 Strategies in Light Conference, speaking of this paradigm shift, posed the question: If we're happy with sunlight coming in from a window in a wall, why do we always have interior lighting from the ceiling?
- **Flexible lighting, integrated design**—Tiny LED lamps and flat organic LED (OLED) panels bring the possibility that lighting might not just move from the ceiling to other parts of the room, but could actually be integrated into the architecture of building spaces. Acuity, Osram, Philips and others already have prototype OLED products that begin to demonstrate this potential. When these companies are freed from the constraints of the current lumen cost war, customers can expect an explosion of options that match form and function.

### A Quandary for Purchasers

With LED prices continuing to fall and quality improving every year, building owners might justifiably wonder when the time will be right to invest in this new lighting technology. While the economics are already starting to lean in favor of adopting LEDs, it is certainly true that waiting 1, 3, or 5 years would allow a much broader set of choices and lower prices. However, as any smartphone user knows, waiting for technology to slow down in today's world may no longer be an option. There is no reason to think that advances in lighting products and services will be any slower 5 years from now than they are today—or that the advantages to waiting will outweigh those of early adoption. •

## Interactive Technology Provides Richer Customer Experience

**A**t its Technology Experience Center in downtown Milwaukee, Johnson Controls Inc. wanted an interactive experience that would convert guests into customers.

“We tried to create an environment where people can come in and collaborate,” says Sherrie Williams, director of executive visit centers for Johnson Controls.

The technology that would guide those



potential clients through demonstrations of Johnson Control’s HVAC, automation and security solutions would not only have to be engaging for guests, but easy to manage, easy to control and customizable for the staff.

“We needed to understand the different ways the center would be used, whether for one customer or multiple customers,” says Williams. “We had to think through everything ahead of time instead of redesigning on the back end.”

That’s what Williams did—applying her

technical knowledge to help map out a system that would provide a rich experience for guests while also enabling ease of control for her and the staff. What she shared with video communications partner AVI-SPL gave guidance to their technicians and engineers so they could deliver



the hands-on experience—largely through interactive video displays—that would convey the depth and breadth of Johnson Control’s expertise.

“We were adjusting gear all the time until it went out the door so it would work exactly as the client expected,” says AVI-SPL Project Engineer Adam Stanton.

Throughout the Johnson Controls touring area, AVI-SPL implemented solutions such as AMX system control technology and Panasonic projectors to automate processes and empower staff while creating an interactive experience.

That interactivity extends from the six-display Global Welcome Wall to the Showcase, which includes touch-sensitive screens that deliver a user-controlled experience of Johnson Controls solutions. Along the way, three paperless briefing centers empower guests to take self-guided tours, and an Orientation Theater screens a five-minute video that introduces guests to Johnson Control’s expertise. Rather than project the video on a traditional screen, the team placed a reflective paint over a recess in the wall, and creating a display area that improves screen gain and provides vivid colors.

Johnson Controls now has the capability to wow guests and secure building automation projects. Users are in control of guiding their tour, one tailored to demonstrate solutions that improve the efficiency and cost-effectiveness of

their operations.

“It’s about getting stronger relationships with our customers, and having them touch and feel the technology and understand how we can impact their businesses,” says Williams.

At the Global Welcome Wall, guests view a video story that has been loaded especially for them. So that visitors hear only the audio that accompanies the video story, Johnson Controls had custom speakers installed sized to the width of each display directly above the listening areas.

The Showcase welcomes visitors with a touch-sensitive vertical display that tells the Building Efficiency story. From there, three touch tables allow users to explore themes of Leadership, Day in the Life and Lifecycle. A control system handles the lighting at the tables, and guests can see what the most popular topic is via projector.

“Our technology tables enable conversations,” says Williams.

Guests can also interact with topic kiosks and interactive wall displays that share product information and Johnson Controls’ experience in solutions related to energy and renewables through video, files and images.

“Once you’re in front of the interactive tables and kiosks, the technology kind of goes away, and you’re on your own self-discovery,” says Stanton.

Since its opening earlier this year, the tour center has welcomed hundreds of guests.

“The reaction has been amazing,” says Williams. “They ask, ‘Who are your



partners?’ I always look at AVI-SPL as a partner, not just a vendor.”

Through this collaborative effort, Williams can control every device and



display customized content from her iPad. Understanding her vision and addressing Johnson Controls’ needs were key reasons for a successful project. •

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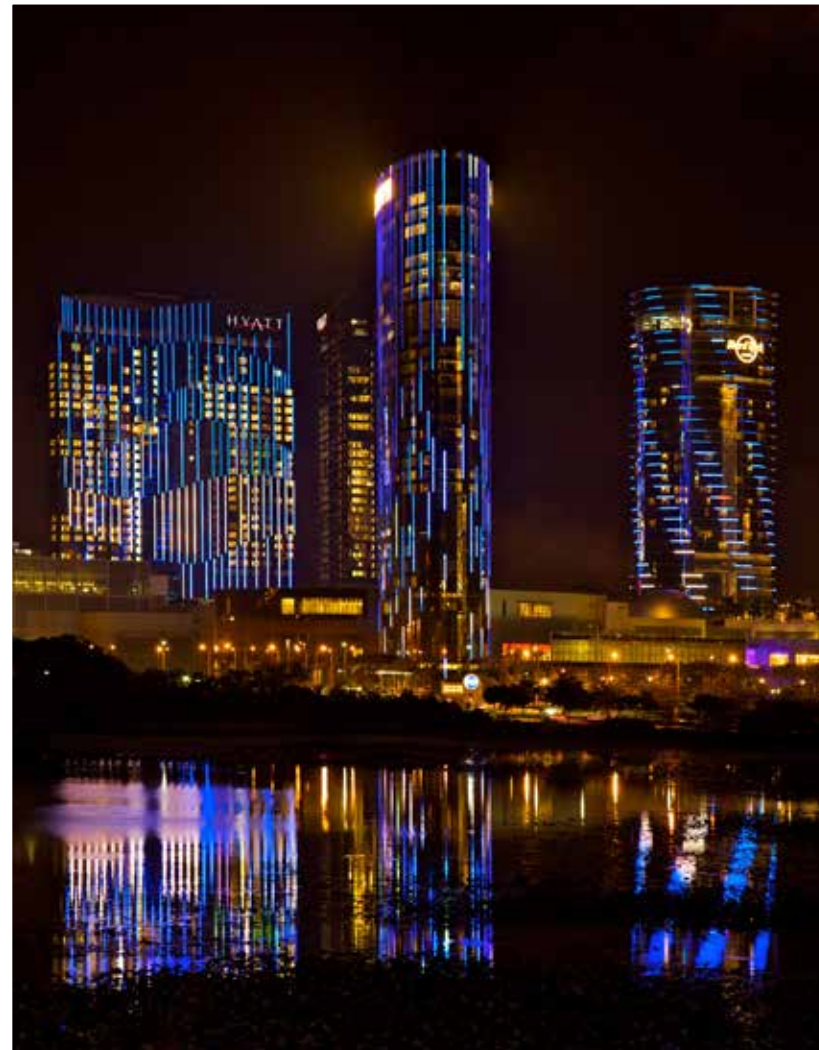
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## High Definition Buildings: Creating Iconic Brands Through Digital Signage



**Howard Berger**  
Managing Partner  
Realcomm

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For over 100 years, architectural design and height have been two of the main features that distinguished iconic buildings, buildings familiar to everyone, landmarks where people wanted to work. Whether an old refurbished building in Detroit or the Burj Kalifa in Dubai, the physical aspect of a building contributes greatly to its reputation, desirability and ultimately the income it produces.

Over the last 30-40 years, signage has become a more integral part of a building's visual

impact. For example, consider the newest buildings in Las Vegas, New York, Hong Kong or Tokyo. In many cases, the digital signage and the lighting have redefined the 'personality' of the building.

In most cases, the brighter the lights, the closer to the city center you are located. This area remains a dynamic place where people want to be, where the best businesses are located and where the rents are the highest. Speaking of rents, some could argue that the revenues per square foot of digital signage have long surpassed the square footage of the building itself.

Recent years have brought a new generation of digital signage placed on the exterior facade. It is more elegant, classy, sophisticated and higher definition. The visual aspect is impressive and compelling. This new generation of signage is meant to grab your attention and capture your imagination, keeping your attention longer. It is not simply a screen bolted on a building with non-stop graphic chaos, but rather a very well thought out story that uses the building as its canvas.

One company, who many consider to be one of the global leaders in creating these iconic building showcases, is StandardVision. A pioneer in the creation of blade-based LED media façades for both new construction and retrofits, StandardVision is the leader in the design and manufacture of architecturally-integrated LED lighting systems. They specialize in delivering high-resolution images, viewable day and night, without bulky solid screens interfering with the architecture. They have an array of patented products and technologies that have been used in award-winning projects around the globe and partner with the world's top developers, architects, artists, ad agencies and brands.

StandardVision does not just hang a sign on a building but rather incorporates very high definition, engaging media productions into the very essence and design of the building. Their goal is to make the signage and the building one, and to create a personality for the building that is comprised of both the traditional tools of

architecture and this new generation of digital technologies. Project owners working with StandardVision have one single goal: they want their buildings noticed, distinguished and remembered. These iconic buildings in many cases are also defining the energy and scope of the entire skyline and city.

What are the most important issues to consider when it comes to a Media Façade or a 'High Definition Building'? David Agnew, President of StandardVision, LLC, had this to say:

- Realize the importance of having a content strategy prior to designing or installing a media facade (i.e., know exactly what you're going to use it for).
- Give due consideration to integration of the media facade technology into the building's facade (versus hanging a rectangular screen on the side of the building).
- Be aware of the crucial need for knowledgeable local legal counsel to help lead the way through the minefield of code restrictions and entitlement issues.



Taman Anggrek (Jakarta)

- Understand how media facades will impact adjacent properties.
  - Understand LED media facade maintenance issues.
- Buildings today are competing for attention and tenants, and setting yourself apart from the competition is more important than ever. No matter where you are, Detroit or New York City, a high definition media experience on the building's exterior is sure to help build a brand and attract tenants. •



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