IBM and BU Set the Stage for Neighborhood Transformation in Boston

Making a Difference
IBM doesn’t officially have a “Smart Neighborhood” program, although it has an initiative to support “Smart Buildings” and “Smarter Cities.” Nevertheless, IBM’s work in Boston in conjunction with Boston University’s Sustainable Neighborhood Laboratory delves directly into the granular aspects of community living on a building-by-building, or “system-by-system” neighborhood basis. BU’s cross-discipline Sustainable Neighborhood Lab is driving community dialog and helping to find suitable contacts interested in leveraging the power of IBM’s Intelligent Building Management virtual appliance (see IBM Brings Advanced Analytics its Intelligent Building Management Virtual Appliance, EMA, June 2011). This brings IBM into face-to-face conversations with neighborhood building managers seeking to monitor, optimize and define energy exposures for their investments.

IBM’s Intelligent Building Management Solution
In June of 2011, IBM introduced its new Intelligent Building Management product, which evolved out of a reference architecture first announced in 2009. The announcement featured new advanced analytics and partner integrations from third-party Building Management Systems (BMSs) such as JCI, Eaton, Schneider, and Tridium, as well as an established relationship with Johnson Controls to monitor functions such as heat, ventilation and air conditioning (HVAC). IBM’s Intelligent Building Management virtual appliance then brings its rich analytics into the picture to help facilities planners and managers optimize energy usage at a level never before possible.

This can be achieved both by capturing anomalous behaviors – e.g. the air handling unit is working overtime, so that corrective actions can be taken proactively, and in trending analysis and best-practice rules for managing energy more effectively. IBM’s solution can also apply analytics to energy and environmental sustainability in areas such as utility tracking, environmental opportunity analysis, carbon output measurement, and GreenHouse Gas emissions tracking. Finally, and also relevant longer-term to neighborhood sustainability, IBM’s Intelligent Building Management solution can support space optimization, real estate planning and capital project management, thanks to its acquisition of Tririga, Inc. in May of 2011.

IBM and BU Team up
Boston University’s Sustainable Neighborhood Laboratory (SNL) was established in 2011, but evolved out of a three-year history of cross-disciplinary attention at BU to address the challenges of achieving cleaner and more sustainable energy in Boston’s urban environment. BU’s initiatives also benefitted from several National Science Foundation (NSF) grants, one of which was directed at monitoring the exact amount of ambient CO2 emissions in an urban neighborhood. To do this, Associate Professor Nathan Phillips installed a tunneling spectroscopy system on a BU rooftop two years ago, making it the oldest continuous effort of its kind in the United States.
Today, with a seed group of about fifteen faculty and students from several schools across campus in a virtual community for sharing ideas, BU’s Sustainable Neighborhood Laboratory has become a perfect fit for harvesting the benefits of IBM’s Intelligent Building Management solution.

According to Executive Director Paul McManus, “The Sustainable Neighborhood Lab is looking to bring together a series of research projects across multiple disciplines under one umbrella with one strategy and focus. Our interests go beyond fundamental research. We are also very interested in effective commercialization – and intend to serve as an incubator for businesses and entrepreneurs seeking to apply the benefits of our research to the open market. As a result, we have a pretty diverse set of stakeholders including citizen groups, industry groups, municipal groups, and even capital partners and banking and financial stakeholders, just as a few examples. So we’re a neutral convener like Switzerland – an academic environment advancing a higher mission across industry, government and the community.”

IBM’s Expanding Role

According to McManus, “IBM is our first committed corporate partner and they play two types of roles. One is a philanthropic role via technology and financial contributions. But IBM is also working closely with BU in the sustainable neighborhood program as an active participant.”

Anne Jackson, an IBM Strategy Consultant based in Cambridge, began working with BU’s SNL Director Linda Grosser in early 2010. Grosser was coordinating early-stage cross-disciplinary work on energy at BU. IBM’s enthusiasm becomes self-evident when talking to Jackson: “Getting started was a little like making stone soup. While a single stone makes terrible soup, once people started to put in their contributions, whether in technology, knowledge or access, we soon began to build a value network that became quite compelling.”

Last year the BU Sustainable Neighborhood team won an IBM Faculty Innovation award, which helped develop a multi-disciplinary course in sustainable energy. And this year the partnership has grown with significant contributions on both sides, including IBM’s Intelligent Building Management. The IBM solution will support a wide array of initiatives, including the Sustainable Neighborhood Lab, as well as potentially monitoring the building efficiencies of the BU campus itself. It will also extend to support a BU initiative targeting “patterns of consumption in urban housing” with the objective of creating a “sticker” on the “total cost of occupancy” much like the miles per gallon on cars.

IBM’s commitment to the BU initiative grew substantially when Dave Bartlett, vice president of IBM’s Smarter Building Division, met with BU organizers at Anne Jackson’s suggestion mid-way through 2010. IBM’s support for BU might be viewed as two intersecting circles. For instance, while BU fully expects to get other businesses and corporations involved in its Sustainable Neighborhood Laboratory, Bartlett is in active dialog with other universities such as M.I.T., Tufts, and the University of Massachusetts in Amherst.

“I view the Sustainable Neighborhood as a part of our Smarter City umbrella,” said Bartlett. “It’s an extension of the city command center capabilities we’ve helped municipalities to establish in cities from Singapore, to New York, to Rio de Janeiro. But it brings a bottoms-up dimension to the top-down command center that’s unique because it involves grassroots participation from the community. It adds an extra human dimension to the assimilation of our technology.”

Currently, IBM has been in dialog with BU building managers, and owners and managers from buildings in the Back Bay area near Copley Square and Boston’s Roxbury neighborhood. The reception has been overall positive, with many seeing the value, but not being ready, as many don’t yet have any Building Management Systems in place. IBM is looking to help them work around this, and even support redesign situations where energy distribution is so inefficient that first floor residents have to sweat long before top floor residents can take off their sweaters. Data such as alerts, alert backlogs, carbon-dioxide...
emissions, electrical consumption, fuel consumption, gas consumption, outside temperature and total energy, just to name a few examples, can be fed back into the Intelligent Building Management system Mashup Center for visibility, reporting and analysis.

According to Michael Hayes, the IBM architect meeting with Boston building managers in conjunction with Linda Grosser, “The biggest thing is to see the positive attitudes from the owners and operators. Most are clearly saying ‘we want this’ even if they’re not yet ready for it. The fact that the IBM solution can help them not only help them monitor problems, but set up best practices for improving building management, has a real appeal.”

EMA Perspective

It isn’t often that EMA gets an opportunity to cover an initiative with so much explicit value to a broader audience than a single IT organization or the business it supports. On the other hand, it’s apparent that if 21st Century living is to progress beyond ad-hoc reactions to an increasingly dire set of weather, environmental and natural emergencies, high technology will have to come to the forefront of the solution. IBM’s Smart Building and Smarter Cities initiatives as reflected in its work with BU are not only paving the way for new markets, they are clearly in the vanguard of socializing and applying solutions that are likely to become increasingly essential for resilient and sustainable living in the future.

IBM’s Smart Building and Smarter Cities initiatives as reflected in its work with BU are not only paving the way for new markets, they are clearly in the vanguard of socializing and applying solutions that are likely to become increasingly essential for resilient and sustainable living in the future.

---

About EMA

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals and IT vendors at www.enterprisemanagement.com or blogs.enterprisemanagement.com. You can also follow EMA on Twitter or Facebook.