Email to a friend Printable version Article reprints

May 2009

Benchmarking: You Can't Control What You Don't Measure

May 2009 - Vol. 4, Issue 5

Benchmarking: You Can't Control What You Don't Measure

By Richard G. Lubinski

An old business axiom says, "You can't control what you don't measure." As a result, nearly everything in business is measured, tracked, monitored, analyzed, and benchmarked – except utility bills.

The ENERGY STAR® program and a number of utility benchmarking tools have made it easier to track energy consumption and costs than ever before. One of the most successful aspects of the ENERGY STAR program is the Portfolio Manager program, which enables building owners to benchmark their buildings against similar buildings in their region of the country. It's no longer acceptable to track only the cost of energy in an accounting system. We need to track the consumption and the utility bill data to have a basic understanding of utility expenses.

Optimizing Bill Payment

Making life more challenging, the utility business has gotten comfortable with things that aren't acceptable in any other area of business – estimated bills, short meter-reading periods, long meter-reading periods, etc. While utility companies retain the right to guess at your energy consumption, they also demand the right to charge you 18-percent, 24-percent, or 36-percent interest if your payment is one day late. Some utilities have implemented a new practice, making their bills due 14 days after the bills are printed, almost guaranteeing that many customers will not pay on time – in effect, a rate increase without approval by the public service commission. In addition, energy-commodity firms require payment in 10 to 15 days, or you're subject to late payment fees. If it takes 2 or 3 days for the USPS to deliver your mail, the payment approval and payment window is even smaller; therefore it's important to process utility bills ahead of common NET 30 bills to avoid late fees. Borrowing money each month from utility companies is expensive.

If you receive multiple electricity, electricity commodity, natural gas, natural gas commodity, water, and sewer bills for one building, the utility bill payment process isn't easy. If you receive hundreds of utility bills each month for multiple buildings, the process is slow, complicated, and costly when you pay late fees. Many companies elect to outsource bill payment and administration to a local, regional, national, or international service firm. These firms not only make sure the bills are paid on time, but also provide a long list of services that can create a utility benchmarking database for your buildings.

Service firms typically use optical character recognition (OCR) to look at every element of each utility bill, including account number, meter numbers, billing date, due date, rate numbers, days in the billing period, actual vs. estimated billing, consumption, and amount due. The current data for each utility bill (and, sometimes, multiple meters within an aggregated utility bill) is entered into an

electronic database. A database is the only intelligent way to manage utility bills and payments. The utility database matures into a *real management tool* when you compare the current period with the same period the prior year.

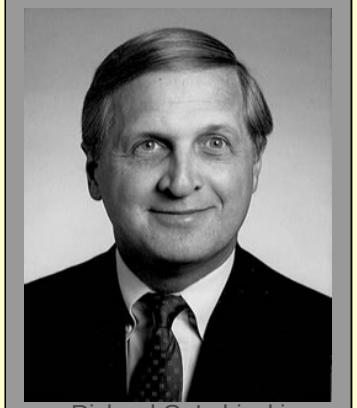
Once you have the data, the next step is to benchmark one building against another. Because you know each building's square footage, you can calculate energy units like kilowatt-hours per square foot. If the list is then sorted, it becomes clear as to which buildings are using more energy per square foot. Now you can look further into buildings with higher energy cost and consumption per square foot.

If your buildings are located across the state or country, you'll find wide variations in utility cost per unit and utility tariffs. You might pay 4 cents/kilowatt-hour in Tennessee and 25 cents/kilowatt-hour in New York or California. This fact of business life may lead you to invest first in energy-efficiency improvements in the higher-cost areas so that the company's return on investment (ROI) is higher. When you overlay the energy cost per square foot, you immediately see that this isn't an apples-to-apples comparison. Although it's counterintuitive for business people, the key is to focus on the energy units and not the dollars. A useful tool is to convert the kilowatt-hours and dekatherms of natural gas into a more universal energy unit, or BTU. Now you have a report that shows the BTUs/square foot for all of your buildings. While this might seem like the end of the analysis, we still don't want to directly compare BTUs/square foot for an office building in Cleveland with one in Miami. Your data needs the overlay of heating degree days (HDD) or cooling degree days (CDD) that's available free from the U.S. Weather Bureau. The simple BTUs/square foot analysis should be portfolio wide as well as by state or region.

The Accounting Approach vs. the Database Approach

For a firm with an old-fashioned, "accounting-system only" approach, rate increases, estimated billings, and errors in meter readings may require a major investigation; however, a firm with a utility bill database can get to the meter level instantly and, in most cases, click on a PDF of the utility bills. In addition, a facilities manager understands utility bills, but the average accounting person may not. The difference in billing approach can involve thousands or tens of thousands of dollars. You can expect the utility's customer service department to defend its position, so you need to be equipped with the facts, including historical meter and billing records.

In an old-fashioned paper system, past utility bills for Building 999 are filed away in an archive, and probably by date vs. by payee. Electronic records become very useful in straightening out a metering or billing matter. Your utility company can supply the last 24 months of detailed metering/billing data; if given time to pull its records, the utility can go back many more years. In a few cases, we have gone back 5 to 10 years in monthly utility bills, resulting in tens, and even hundreds of thousands, of dollars in refunds.



Richard G. Lubinski

Richard G. Lubinski is president at Silver Lake, OH-based Think Energy Management LLC, a nationally recognized energy consulting firm. He is also a Life Member of the Association of Energy Engineers (AEE) and serves as the president of its Northern Ohio Chapter. Lubinski holds several national professional certifications including: Certified Energy Manager, Certified Demand Side Management Professional, Certified Sustainable Development Professional, Certified Energy Management Systems Contractor, Certified Business Energy Professional, and Certified U. S. Green Lights Survey Ally. In 2006, Lubinski was named Energy Manager of the Year, Region III by AEE. He writes and speaks regularly on a wide variety of energy-management topics.

Most companies that are serious about energy management and utility cost control eventually move toward an internal or external utility database. Since the Internet has become a common business tool, many of the records can be placed online so various people within your company can access records and automated energy-management reports. Of course, all online data requires an assigned user name and password just like your company network.

On your authorization, a third-party bill payment service can redirect utility bills to its mailing address and enter bills by OCR into your utility database. Prior utility bills can be faxed or scanned and e-mailed to the service, but this greatly slows down the process. Automated systems typically have the data in the system the next day, whereas mail, fax, or e-mail systems may delay the process by 1 or 2 months. Because the cost of the electronic bill handling software system is spread across many thousands of customers, it's more cost effective than trying to duplicate this service on your own. The outsourcing process makes your life easier and makes the simple utility bill into a useful management tool. You have built-in tools to analyze year over year, year to date, quarter to date, etc. You can add occupancy, production, and other data to view your utility costs as your other business measurement tools change.

A good bill payment and administration service automatically audits every utility bill, which can involve checking 20 to 50 separate elements. If the automated system finds a problem, it creates an exception report for a service bureau to investigate. The service bureau can contact the utility company and inquire about the questionable data or billed amount and get it corrected with no effort from you. If occupancy drops (e.g. summer months at a school), but utility consumption doesn't drop, your new energy-management tool identifies this and starts the process of fixing the problem. Does your firm want to track and reward units and employees based on key performance indicators (KPIs)? Maybe energy-consumption control can be a useful KPI to your company.

If your company is interested in the environment, you can track your energy consumption and carbon footprint via your new management tool. While some companies might not care now about their carbon footprints, this will change if the proposed cap-and- trade tax is implemented. Under cap and trade, you'll be required to track your energy use to avoid paying extra taxes due to a lack of business records. Other potential benefits of a utility database include support for your supply-side energy management efforts. If you purchase energy commodities in deregulated markets, it's helpful to have a database to track your consumption. In energy procurement, your "load profile" (what you use and when you use it) has a direct impact on the price you pay for energy. If you use 98 percent of your natural gas in winter, you will pay a higher cost per dekatherm. The same is true if you have high summer air-conditioning loads. The utility database can also be used to budget and identify consumption and cost trends that require the facilities manager's attention.

There's more to utility bills than just paying them. Successful energy management uses data, financial analysis, and independent energy engineering to develop an effective program that contributes to ROI, net present value, asset appreciation, and financial health.

Data Charts:

1. A typical service bureau process chart
2. An executive summary page
3. Typical utility data for one monthly bill
4. Sample of an automated chart
5. Sorted data presented in a stacked chart
6. Actual vs. budget reports
7. Progress reporting of BTU reductions
8. Consumption data

Previous Issues

April 2009 Cap & Trade Taxes Created
March 2009 Demand-Side Management: Now More than Ever
February 2009 Low-Cost Energy-Conservation Measures
January 2009 Energy Management, CFO Style
December 2008 Smart Green Buildings
November 2008 The Obama Energy Plan
October 2008 Nuclear Power Update
September 2008 Solar Set to Soar
August 2008 Charles Darwin and Energy Policy
July 2008 Renewing Interest in Hydropower
June 2008 Outsourcing Electric Reliability Standards
May 2008 The Next Phase in Energy Conservation

Don't forget to check out our Video and our Case Studies!

Newsletter Sponsorships

• **@ The Moment** - A weekly newsletter produced by **Buildings.com**.

• **Roofing News** - Monthly roofing newsletter.

• **Greener Facilities** - Monthly newsletter about green facilities.

• **Security News** - Monthly security newsletter.

Published by:
Stamats Business Media
615 5th Street S.E., PO Box 1888
Cedar Rapids, Iowa 52406-1888

(Return to Top)

From the publishers of BUILDINGS

Comments

To leave your comment please login or register.

No comments

BUILDINGS at ARCHI-TECH Interiors sources STAMATS Business Media