Case Study

A New Perspective for U.S. Grocery Retail

Fresh & Easy Neighborhood Markets: Lessons in Energy and Maintenance Management from One of the Best in the Grocery Business

VERISAE

Fresh & Easy Neighborhood Markets

Introduction

When Steve Hagen joined Fresh & Easy Neighborhood Markets he knew he was signing up for something big. It would present an opportunity and a challenge unlike any he had seen in his 26-year career as a middle manager in grocery retail.

News of Fresh & Easy Neighborhood Markets had been causing a stir for months. The new company was the brainchild of strategists at Tesco, the world's third-largest retailer. Tesco had successfully entered many other countries from their base in the United Kingdom. Now they were turning their sights to the United States.

Tesco's success in the United States was far from certain in 2006. Several other European grocers had already come into the intensely competitive U.S. market. All had gained their toehold by acquiring American grocers. The results were mixed.

Tesco's stakes for Fresh & Easy were especially high. The plan was to start an innovative new chain from scratch. This was a bold idea, like entering a lion's den. Tesco was invading the home turf of Wal-mart, the world's biggest retailer and arguably its most formidable grocery competitor.

Fresh & Easy would aim to offer singular value. Stores would be designed to generate more revenue at a lower cost than *any* competitor.

Architects and merchandising teams worked to make the stores unusually appealing to shoppers. Hagen and his peers focused on how to run them at very low cost. They planned for new levels of labor productivity, efficiency and flexibility. Operations would be leaner than a filet of grass-fed beef.

Fresh & Easy executives encouraged Hagen to think five years ahead. The pace would be fast. The company would build more than 100 new stores in three regional markets in just one year, mainly in the metro areas of Los Angeles, Phoenix and Las Vegas. Fresh & Easy expected to expand to hundreds of locations across a much broader geography within five years.

The Beauty of the Unglamorous

As a mechanical engineer with strong experience in procurement, Hagen brought an appropriate mix of abilities to his new job. He would manage the service providers who manage store and equipment maintenance. He would also manage all aspects of energy, including both procurement and consumption.

Hagen, now National Director of Procurement and Engineering, leads a small team that manages facility engineering, maintenance and energy.

Grocery retailing is a tough business in the United States. The market is ferociously competitive. Consumers in most urban areas have many choices of where to shop. They are highly price conscious. Net profits are thin, averaging only 2% of revenue.

(In contrast, manufacturers earn net profits that average between about 10% and 30%, depending on the line of business. To put it another way, manufacturers are five to fifteen

times more profitable than grocery retailers.)

A grocer operating at a net profit of 2% can generate as much profit by shaving $2,000 out of operating costs as by selling $100,000 worth of groceries. This harsh math forces grocers to be compulsively frugal.

It is a constant challenge for grocers to maintain low costs without compromising their customers' shopping experience. Shoppers don't want to buy food from shabby-looking stores. They want the temperature inside stores to be comfortable. And they don't want to see evidence that the ice cream they buy has been thawed and refrozen.

Key to Profit: Starve the Energy Beast

Even the best-run grocery stores consume a lot of energy. In fact, grocery stores are the heaviest users of energy of any type of commercial building in North America. The cost is high. On average, grocers spend about 1% to 1.5% of their revenue on electricity and natural gas. This means the cost of utilities may equal half or more of total profits. A 10% reduction in energy cost could increase profits by 5% to 10%. For some grocers, such an improvement could flip financial performance from red ink to black.

In a typical large grocery chain, electricity accounts for about 94% of total energy use. Refrigeration systems consume about 50% of that. Lighting uses about 18%. Together, heating, cooling, and ventilation (or HVAC) systems account for about 14%. The balance of electricity use goes toward heating water, cooking food and powering office equipment.

Outsourcing Without Letting Go

Fresh & Easy executives wanted to focus most of their internal resources on selling groceries rather than managing operations. To keep administrative costs low without compromising growth, they decided to outsource store design, store maintenance and energy management.

Fresh & Easy hired Jones Lang LaSalle (or JLL), a large property-management firm, to administer the day-to-day details of maintaining their stores. The JLL team is responsible for ensuring that the stores:

- properly refrigerate perishable items;
- keep store temperatures comfortable for shoppers;

U.S. GROCERY MARKETPLACE

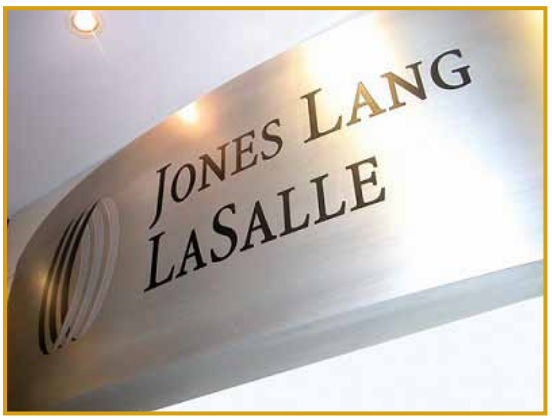
The U.S. consumer food market is one of the largest, most consolidated and industrialized in the world. More than 35,000 U.S. supermarkets generated more than $555 billion in revenue in 2009, and the industry employed more than 3.5 million people.

U.S. consumers also buy food at tens of thousands of drugstores, convenience stores, dollar stores and small independent grocery operators, as well as hundreds of warehouse stores and mass merchants.

The Background

- maintain low energy costs; and
- comply with environmental regulations.

JLL also checks that service providers maintain store equipment to be available when needed. Providers must work efficiently, consistent with the terms of their contracts.



Hagen and his team watch over the shoulder of JLL's operators. They generally stay one step removed from the urgent task of fielding emergency support calls and dispatching repair teams. This way they can focus more time and attention on supporting service providers and holding them accountable for their performance.

Hagen and just two other Fresh & Easy managers oversee the performance of dozens of JLL employees and the roughly 100 third-party service providers that JLL manages.

Perishable Foods = Very High Energy Cost

The top three U.S. grocery chains each spend in the hundreds of millions of dollars on energy for refrigeration alone. Even smaller chains spend millions or tens of millions of dollars on energy to run their refrigeration systems.

Fresh & Easy stores operate in some of the hottest climate zones of the United States. This adds to their cost of keeping refrigerated foods cold.

Each store contains about 40 refrigerated units or cases on the shopping floor. It also has one or more walk-in coolers in the back. A central compressor system serves all the refrigerators.

Refrigeration consumes about 70% to 80% of the energy used in Fresh & Easy stores, compared with the industry average of about 50%. Heavy use of refrigeration has led Fresh & Easy to innovate. They use technologies that enable their refrigeration systems to consume at least 10% less energy than standard ones.

Because perishable food items are a relatively big proportion of the merchandise Fresh & Easy sells, the chain uses about 30% more refrigeration per square foot than other grocery-store formats.

Regulatory Risk and Environmental Concerns

It is expensive for grocers to keep maintenance technicians standing by to fix refrigeration cases at all hours of the day and night, but it can be even more costly not to do so. If a failed refrigeration system isn't fixed within a few hours, it can cost thousands of dollars to replace the spoiled food. Then there is the risk of liability for tainted food, loss of revenue and regulatory fines.

Refrigeration systems use gases that cause environmental damage if they leak into the atmosphere.

The U.S. Environmental Protection Agency (EPA) and European Union (EU) have strictly regulated the commercial use of refrigerant gases.

Retailers can face heavy fines, criminal prosecution, and negative publicity for not managing their refrigerant gases according to the complex regulations. The regulations can be challenging because they vary by country and even state or region.

Cold Facts

Each refrigerated case includes several energy-consuming components or subsystems. These include fans, lights and defrosters. The refrigeration-control systems commonly used in the United States are likely to operate these components in unison. They work for clusters of five or six cases. For example, suppose the controller switches on a fan in one case in a cluster. It will also do so for the others in the cluster. It is like having a single thermostat to control the temperature of a three-story building. Some rooms will be too hot and some too cold.

This technology was popular because it was cost-effective in the days of cheap electricity. But as electricity prices have gone up, so has the operating cost of synchronizing the control of multiple cases. The prevalent technology doesn't enable grocers to fine-tune their energy use for the current temperature and defrost cycle of each case.

The Case for New Case Controllers

Fresh & Easy brought in case-control technology more widely used in Europe. The newer systems contain all the electronics needed to control a single case. This enables grocers to measure, monitor, and control temperature and relative humidity separately for each. It allows them to operate fans, lights and defrosters only when needed.

The cost of case-control technology has dropped from about $2,000 a case in 1992 to around $500 today. Even so, only a handful of U.S. retailers have adopted it.

Big Energy Savings in Small Valves

To further boost energy efficiency, Fresh & Easy uses electronic expansion valves rather than the more common mechanical ones. Expansion valves are important because they control temperature within refrigeration and air-conditioning systems.

Here is how they work. A compressor reduces the volume of a refrigerant gas. This heats it up. The

TESCO

Tesco is the world's third largest retailer by revenue and the second largest by profit. The company is a global grocer and general-merchandise retailer. Besides being the grocery-market leader in its home base of the United Kingdom, Tesco operates stores in 14 countries across Asia, Europe and North America.

After using Verisae's maintenance management system for many years, Tesco introduced Fresh & Easy to Verisae in 2006.

The Goals

FRESH & EASY AS A VERISAE CLIENT

Fresh & Easy has been a Verisae client since 2006. They came to Verisae through Tesco, their parent company. Tesco has been a Verisae client for many years.

Fresh & Easy first bought Verisae's enterprise asset management system, then expanded to refrigerant management and real time energy monitoring. The company has since licensed all 26 of Verisae's software applications. The software now manages energy, maintenance and environmental performance at all of Fresh & Easy's 180 locations.

warm refrigerant passes through a condenser coil. The coil releases the heat to the outside air. Then an expansion valve releases the compressed refrigerant gas, allowing it to expand quickly. They become chilled. It then passes through an evaporator coil, which removes heat from inside the cooled area.

The same principle causes the valve on a gas tank to get cold when you fill a helium balloon.

The performance of mechanical expansion valves tends to decline over time. They become less efficient after two or three years of operation. Then they require more energy to achieve the same amount of cooling.

Service technicians can adjust or tune mechanical valves every few years. This returns them to their original efficiency. But retailers tend to avoid the process because it is labor intensive, disruptive and expensive. A retailer may have to shut down a compressor and empty a freezer case for a day or more so a service technician can adjust its valves. For the 7,200 refrigerated cases that Fresh & Easy operates, the cost would be too high.

Electronic expansion valves avoid these problems. They function at peak performance for a very long time. This enables Fresh & Easy to maintain higher efficiency without the maintenance.

Fresh & Easy's stores all have roof-mounted direct-expansion air conditioners, with big air-handling systems for the entire building. Like the refrigeration systems, these HVAC systems also have electronic expansion valves.

Lower Initial Cost, Faster Payback, Higher ROI

Hagen and his team were prepared to pay higher initial costs if they could achieve lower operating costs within a few years.

But Hagen was pleasantly surprised. Efficient case controllers cost less to buy and install than conventional ones. This is because most of their electronic components reside within each case. They use 26% less high-voltage wiring and 83% less low-voltage wiring. And they require fewer electrical panels and temperature-sensor cables.

In addition, case controllers use a different kind of piping to convey refrigerant from compressors to cases. A configuration called loop piping reduces by 40% the amount of insulation and expensive copper piping needed for conventional piping. It also reduces the need for brazing. This cuts labor costs and slashes refrigerant leakage rates.

Fresh & Easy further reduces costs by using secondary-loop systems to reuse cool air. They also use night

shades on refrigeration cases. The shades keep cool air from escaping.

Cutting Costs While Reducing Carbon Emissions and Regulatory Risk

A computerized system helps Fresh & Easy manage refrigerant gases. All stores are new, so none of them use the old R-22 (or Freon) refrigerant. Production of Freon has been banned in the United States because scientists believe it is a powerful accelerator of climate change.

All the Fresh & Easy stores except one use the newer and safer R404A refrigerant. Even so, R404A has a global-warming potential of 3,300. This means that one pound released into the atmosphere has the same effect on climate change as 3,300 pounds of carbon dioxide.

Accidental leakage is hard to detect and prevent. A typical store runs miles of copper refrigerant pipe between the central compressors and the refrigerated cases. A leak could occur at any solder joint. This is especially true in the earthquake-prone regions where most Fresh & Easy stores are located.

Fresh & Easy uses leak-detection technology to sniff out problems. Their computerized system also maintains accurate computerized inventories of the refrigerants in use. It ensures that the chain is in full compliance with regulations. Careful refrigerant management has helped Fresh & Easy maintain leakage rates below 10%, while the average for U.S. grocery retailers is 25%.

Even with such low leakage rates, refrigerants with high global warming potential still pose environmental risks. Fresh & Easy engineers have researched and tested a cooling system that uses only carbon dioxide. The technology is in use at a store in Rosemead, California.

More Light, Less Heat, Higher Energy Efficiency

Many grocers have improved the efficiency of their lighting by swapping out incandescent lights for fluorescents. They have substituted T-8 fluorescents for the older T-12 or T-10 bulbs and fixtures.

Fresh & Easy has gone further. The company's latest store design uses insulated skylights that use prismatic lenses. The lenses transmit light efficiently without hotspots, glare, and damage from ultraviolet light. The prototype stores also use oversized windows to take advantage of natural light. Overhead lights dim automatically to save energy when natural light is adequate.

In addition, the company uses light-emitting diodes (or LEDs) in exterior signs, cooler doors and freezer cases. LEDs are much more energy-efficient than fluorescent bulbs, but their initial cost is higher and their payback period is longer.

Central Command and Control

Fresh & Easy's service providers typically specialize in refrigeration, HVAC, plumbing, electrical, lighting, carpentry, housekeeping, or grounds maintenance. Many are small, local companies that work for only a few stores.

The Concerns

Early Results

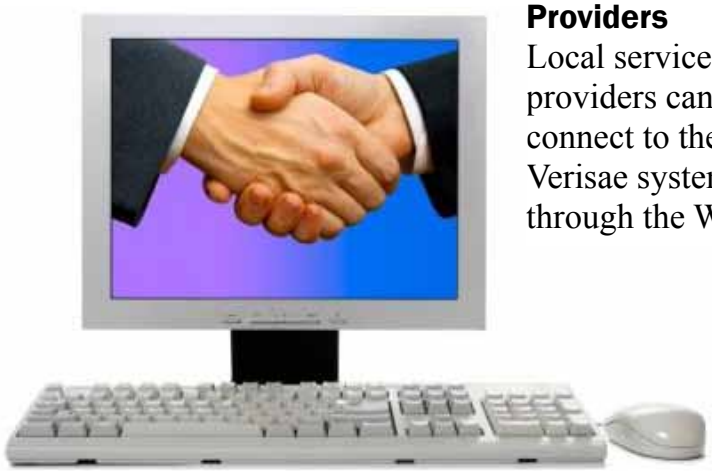
JLL employees normally use their company's own systems to manage relationships with service providers. But Hagen and his team mandated that JLL use a suite of technologies from Verisae, Inc.

Automating the Call Center

JLL uses Verisae's maintenance management software to run a central maintenance call center. The center serves all 175 Fresh & Easy stores. When it receives service requests, it first performs remote diagnostics whether to dispatch a service truck. The center assigns an urgency level and creates a work order for each dispatch. The system tracks which service providers offer the necessary services for each store and assigns the work.

Sometimes JLL and Hagen's team receive alerts before a store manager is aware of a problem. The system monitors case temperatures, relative humidity, ambient temperatures, use of lighting systems and total energy consumption. It can send an e-mail or SMS message whenever a measurement such as temperature has drifted outside a specified range.

Easy Online Access for Service Providers



Local service providers can connect to the Verisae system through the Web. They see only the data appropriate for the work they do. Using a PC or kiosk with Internet access, service providers can view incoming work orders, acknowledge receipt and dispatch their crew.

For example, a service provider may get a call that a refrigerator is not working. A technician can check from the office to look for a likely cause. Is the problem due to a motor failure, loss of local power, or a low refrigerant level? The technician can see which makes and models of equipment are onsite. They can check when they were last serviced. The Verisae system helps service providers anticipate what they are likely to find when they arrive. They can decide what equipment to bring. The system cuts labor costs by reducing the need for return visits. It also reduces equipment downtime by expediting an effective response.

From their dispatching office, service providers can track the whereabouts of their crews. They can also report progress on open work orders and submit work reports and invoices. The entire process is paperless.

Secrets of Shorter Service Calls and Lower Fees

Service technicians onsite can use the Verisae system through a dedicated computer at the local store or a laptop aboard a truck. Fresh & Easy is also exploring system enhancements that will allow technicians to view and enter data from smart phones.

Onsite service providers can see a digitized floor plan that shows the location of all key equipment

including fuse boxes and switches. This capability saves time and reduces labor cost by directing technicians straight to the location of the problem.

Technicians use the system to enter details of the work they perform. They must include their starting and ending times while they are onsite.

This on-site labor-tracking capability ensures that Fresh & Easy is not charged for more time than technicians actually spend. Since implementing the system, Hagen has been pleased to see a major reduction in service bills. He noted that service technicians usually round up the time they spend on a work order. They tend to report calls of 30 minutes or one-hour increments.

Now providers must state the duration of their service calls more precisely. If a call takes an hour and 23 minutes, that is what the technician reports. Fresh & Easy saves many thousands of dollars a year from accurate reporting of work time.

Reducing Administrative Cost

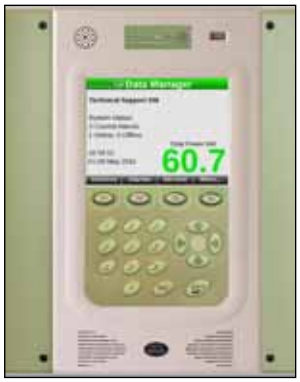
Because service providers enter their data directly into the system, Fresh & Easy also eliminates internal cost. They have no internal clerical team to enter and validate data from work reports and invoices. Service providers also see a benefit from doing the additional work. They get paid sooner because the approval and payment process is faster.

Finding Billing Errors and Discrepancies

Hagen and his team have access to all of the data available to both JLL and the service providers. They use the system to flag specific work reports and invoices that may have issues for manual review.

Hagen uses the system's paperless review capability to challenge as many as 30% of initial invoices from his service providers. He has seen many cases of incorrect or improper billing. He has been invoiced for unauthorized and unnecessary work done because a technician misdiagnosed a problem.

Hagen has challenged many work reports that claim excessive labor time. The system may show that the service provider took breaks or didn't work for as long as he claimed. Hagen has also spotted invoices that charge for services performed outside the terms of contracts or work that should have been done at no charge under warranty. The savings add up to hundreds of thousands of dollars a year.



The Resource Data Management (RDM) hardware is installed in Fresh & Easy stores to monitor case temperature, discharge temperature, coolant pressure, relative humidity, energy load, and energy use for refrigerated cases.

Making Time for Planned Preventive Maintenance

Because Hagen and his team are not overwhelmed with administrative paperwork, they can focus more time and attention on planned and preventive maintenance. By doing so, they have reduced equipment failures. They have also reduced the need to call service providers for urgent responses at higher rates.

Managing Energy Managers

JLL also uses Verisae's system to manage Fresh & Easy's procurement and use of energy.

Fresh & Easy has installed hardware for remote metering, monitoring, and controlling of refrigeration, HVAC, and lighting systems in all their stores. The energy management devices come from Resource Data Management Ltd. (or RDM) of Scotland. They cost about two-thirds less than comparable ones available from major U.S. manufacturers.

The controllers can turn equipment on and off remotely. They follow rules that Fresh & Easy can easily program into software that resides on each device.

Stores have supplemental electricity and natural gas meters to provide utility-usage data between billing statements. Fresh & Easy uses these data to accrue and allocate energy costs, monitor usage rates and catch billing errors.

Automatic Collection of Consumption Data

The company also uses sub-meters to measure electricity use for refrigeration, HVAC systems, and lighting in each store. The RDM devices have open communications protocols that can securely communicate data over the Internet. Hagen likes the open protocols because they enable Fresh & Easy to work with any device manufacturer or software vendor.

The meters can

FRESH & EASY BUSINESS STRATEGY

Tesco executives recognized that to succeed in the hypercompetitive U.S. grocery market, Fresh & Easy would have to do things differently. The plan was to create a superior shopping experience that delivers exceptionally high value. The stores would offer healthful foods at low prices. They would merchandise their products attractively., and they would operate even more frugally than their competitors.

Fresh & Easy's stores are a hybrid between grocery and convenience formats. Unlike most convenience stores, they offer a broad selection of fresh foods. About 80% to 85% of square footage is for grocery. This is unusually high because Fresh & Easy's stores carry very little general merchandise. They have a rather Spartan appearance inside, with bare concrete floors and no fancy displays.

The company works with Leadership in Energy and Environmental Design (LEED) to certify stores as sustainable and energy-efficient. The stores use heavy insulation so they need less heating and air conditioning.

These and other innovations enable Fresh & Easy stores to use 30% less energy per square foot than a conventional grocery store.

While appealing to environmentally conscious shoppers, Fresh & Easy also saves money by stripping every scrap of waste out of each facet of their operations. For example, the company's prototype stores use skylights and oversized windows to take advantage of natural light. Overhead lights dim automatically to save energy when natural light is adequate. Although LED lighting costs more and has a longer payback than fluorescent bulbs, Fresh & Easy stores use it for exterior signs, cooler doors, and freezer cases.

Fresh & Easy's success has been evident. The company has continued adding new stores throughout the recession while other chains are shutting down locations.

record changes at intervals as short as every five seconds, and they can store detailed data for a year or more at the store. The data are always available to store managers, JLL and Hagen's team through a secure Web connection.

Central Database for Energy and Maintenance Data

An energy management system from Verisae consolidates and analyzes store data for efficient central administration.

Hagen said it is a big advantage to have both energy and maintenance data readily available within the same system. For example, an analyst could see that a service technician misdiagnosed the cause of excess condensation on the floor below a freezer case. The technician reported that he had "fixed" the dripping by lowering the thermostat by three degrees. But in looking at the metering data, the analyst could see the technician actually lowered it by six degrees.

Hagen could quickly check energy-consumption data to see that one ineffective service call might have cost Fresh & Easy more than $1,000 a year for additional electricity.

Capturing and Using Data from Utility Bills

Fresh & Easy uses a service from Verisae to capture all the data from every monthly utility bill for each store. The service captures data for electricity, natural gas, water, sewer, and trash hauling. It makes all utility bills easily accessible online to authorized system users. And Verisae guarantees 100% data accuracy.

Finding Billing Errors

One industry estimate suggests that as much as 1% to 3% of utility billing may be in error. Verisae's software can reduce utility cost by helping to spot possible mistakes. The software uses configurable rules to flag discrepancies between usage that appears on utility bills and data gathered by Fresh & Easy's metering systems. The system also compares the bill for each month to the bill for the prior month and to the bill for the same month a year prior. If Verisae finds a difference of more than a set percentage, it alerts JLL and Hagen's team to follow up with the utility.

By comparing metering data to utility bills, Hagen says JLL can quickly find and resolve errors. Savings more than pay for the low cost of the data-capture service. Hagen says the service is more effective and thorough than periodic audits of utility bills. And he does not have to split the savings with a service provider who performs such audits.

Better Energy Procurement

Verisae's system also reduces administrative cost by electronically paying utility bills.

In addition, Verisae periodically evaluates the most cost-effective utility tariff rates for each store. Verisae identifies opportunities for Fresh & Easy to take advantage of utility rebates and incentives. The

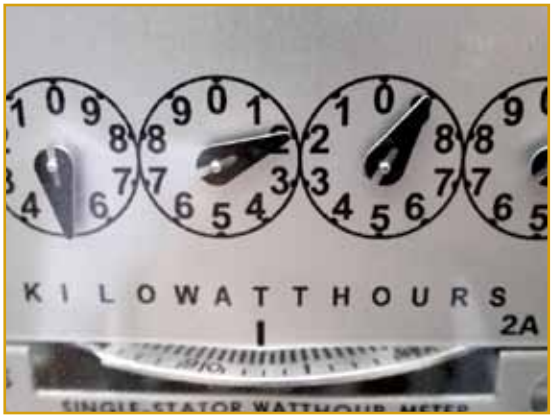
company also points out any state or federal tax incentives that might be available.

Turning Data into Profit

With mountains of energy and maintenance data available to managers at JLL and Fresh & Easy, how do they know what to do next? The Verisae system suggests specific actions. It can spot problems that are brewing. Users can see them without having to dig through data or reports.

Future Plans

When a situation needs attention, alerts may arrive by e-mail, voicemail, or SMS text messages. Hagen and his team can set the sensitivity of the alerts to avoid being overwhelmed by a high volume of low priority notifications.



The system is getting better at telling users what to do to prevent future problems. Enhancements will tell system users what specific actions will be most effective in reducing maintenance and energy costs. The software will predict the future path of current trends rather than focusing on what has happened in the past.

Meanwhile, Fresh & Easy has access to several hundred standard operational reports. Each month Hagen's team runs a series of maintenance reports for each location. The series includes 53 separate reports that include the following metrics:

- Total maintenance spending by location;
- Top and bottom 10 sites for maintenance cost;
- Ranking report of all maintenance costs by source;
- Top and bottom 10 service providers with regard to maintenance spend and equipment availability;
- Top and bottom equipment with regard to maintenance spend and availability;
- Top five sites by number of emergency work orders;
- Summary of work orders rejected by service provider;
- Service-level compliance by service provider;
- Top sites by total energy consumption and peak demand; and
- Top 10 sites with leaking refrigerants.

Extending Traditional Environmental Reporting

Fresh & Easy's commitment to the environment goes beyond energy conservation. The company also tracks and publicly reports its waste generation, recycling, water use and carbon emissions.

Management has committed to reducing water consumption in stores by 30%. They expect to do so, in part, by installing systems to treat

water from refrigeration and air-conditioning systems, which typically consume about 80% of the water used by retail grocery stores.

For organizations that operate across many locations, collection of environmental data can be a big and time-consuming job. Fresh & Easy has simplified the process by feeding data from its energy management, maintenance, and refrigerant management systems into a separate system for environmental reporting.

What You Can Take Away From This Story

Fresh & Easy entered the intensely competitive, mature retail market in 2006. The cards were stacked against them.

They improved their chances of success by coming in with a strong, unique value proposition. To deliver on their brand's value promise to new customers, Fresh & Easy executives knew they would have to achieve unequalled operating efficiency.

Now, five years later, they are well on their way despite "The Great Recession." The company is 180 stores strong. It is aggressively expanding into new geographies.

Fresh & Easy managers achieved this momentum by thinking big and differently. They began by looking at their business from new perspectives and re-imagining it from the ground up.

Over time Fresh & Easy managers refined their vision into the fine details of their operations. They applied their system's thinking and design principles to virtually every facet of the business. And they relentlessly followed through with efficient execution.

Innovation at Fresh & Easy began with novel refinements to a centuries-old retail business model. It influenced details like the store design and choice of technologies they use in their stores. It also determined their business processes, decision to outsource key services,

RESULTS FOR FRESH & EASY

Use of the Verisae software has provided these benefits for Fresh & Easy:

- About $2 million a year in savings on utility rebates and incentives
- About $80,000 a year on rate and tarriff analysis
- Thousands of dollars a year from more accurate reporting of actual labor time
- Thousands of dollars a year from challenging the invoices of service providers
- Thousands of dollars a year from elimination of payment for service on equipment under warranty
- Reductions in utility billing errors and in the administrative costs of managing energy, equipment maintenance and utility bill processing
- Reductions of contractual service rates renegotiated with service providers
- Refrigerant leakage rates of less than 10%, which reduce the cost of refrigerants and reduce regulatory risk
- Benchmarking and evaluation of the performance of service providers
- Reduction of food lost to spoilage due to equipment failures
- Reduction of revenue lost because of unavailable facilities or equipment

relationship with service providers and selection of information systems.

The Fresh & Easy story shows that there are dozens - maybe hundreds - of ways to achieve breakout operating efficiency through creative thinking. Among the company's many innovations, Fresh & Easy has probably gone further than any other retailer in the world to integrate the closely interrelated functions of energy and facility/equipment management.

Future Plans

For executives in other retail companies who want reasons not to change, the story of Fresh & Easy may seem to offer three easy objections:

1. Their business is grocery. We are in a different line.

2. They had it easy in starting from scratch. Our infrastructure is old and messy. We could never do all the things Fresh & Easy has done.

3. They have gone overboard trying to protect the environment. We are not as committed.

Before you dismiss the lessons to be learned here, please consider these points:

- If you work in a different line of retailing, of course you will not be able to apply every innovation you have read about here. If your stores do not contain refrigeration cases, you will not be replacing mechanical expansion valves with electronic ones. Look instead to the areas of similarity. Think about the benefit you could achieve just by getting your maintenance and energy management teams to work more together.

- If your infrastructure is old, you may well face bigger challenges in achieving an acceptable return

- Commitment to the environment is important to managers at both Fresh & Easy and Tesco. But that commitment is consistent with their focus on profitability. You can apply most of Fresh & Easy's ideas to achieve higher profit, even if your management team doesn't care about the environment.

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Dr. Abtar Singh, Vice President of Alliances and Business Development

Dr. Abtar Singh specializes in facility management systems, performance monitoring, optimization of energy and maintenance systems, and predictive analytics. At Verisae he focuses on improving building management processes and reducing operating expenses through the use of enterprise software. He has over 20 years of experience in energy and maintenance infrastructure and best practices for sustainability building management.

Abtar has a M.S. and Ph.D in Mechanical Engineering from the University of Maryland, College Park and a Bachelor of Science degree in Energy Engineering from the Indian Institute of Technology, Kharagpur, India. He is an expert in air-conditioning and refrigeration system modeling, design, and engineering, enterprise software technologies, data warehousing, and he holds more than 40 patents in related technologies.

Prior to joining Verisae, Abtar served as Vice President of product management and engineering at Emerson Climate technologies where he spearheaded the development of many supermarket efficiency technologies such as compressors, electronic valves, energy management systems, and remote monitoring.

At Verisae, Dr. Singh is responsible for strategic alliances including the development of new markets in the Asia Pacific and non-retail market segments.

about Verisae Inc

How You Can Save Up to 35% of the Money You Now Spend on Energy and Maintenance

With Verisae's help, many large, complex organizations can save up to 35% of the money they now spend on energy and maintenance. How you can do it with us.

- **Energy** - Through improved energy management you can save up to about 15% of your current energy cost.

- **Maintenance** - Through improved maintenance management you can save about 15% of your current maintenance cost.

- **Energy & Maintenance** - By better managing the interrelationships between both energy and maintenance, you can save about 5% of both energy and maintenance cost.

Verisae delivers a range of software and services to over 60 clients globally with more than 100,000 daily users including a network of more than 14,000 third party suppliers. Our SaaS platform actively tracks over three million assets across more than 29,000 sites worldwide.

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