

2012 INSIDER Knowledge

**environmental
LEADER**

Lessons Learned from Corporate Environmental,
Sustainability and Energy Decision-Makers

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**OUR ENERGY
FUTURE
IS COMING
TOGETHER.**



**Constellation
Energy®**



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Sustainability and Energy Decision-Makers

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OUR ENERGY FUTURE IS COMING TOGETHER.

We all want the same thing: affordable, reliable, clean, and secure sources of energy. The good news is that we know how to get there, and we're already on the way. Energy markets are increasingly competitive. New Smart Grid technologies are making energy use more efficient. Investments in solar, wind, and natural gas will more cleanly provide electricity for homes and businesses today, and for the cars and trucks of tomorrow. At Constellation Energy, we understand the challenges. And we're delivering the innovative energy solutions that are helping our customers succeed and our communities prosper.

constellation.com



Constellation Energy®

From environmental leader's publisher

Welcome to Environmental Leader's **Insider 2012 Knowledge Report**, which provides corporate lessons learned from 132 environmental and energy management leaders.

We received more than 350 submissions for this year's report. We wish we could have included all of the lessons learned that we received. It took many weeks for us to winnow that number down to the final report you're reading.

We were again struck by the effort readers put into their submissions. Thank you to everyone who contributed. Your efforts will inspire the many thousands of people who read this report.

Thank you to our sponsor, Constellation Energy, for making the production of this year's report possible.

Paul Nastu, Founder & Publisher

Environmental Leader
www.environmentalleader.com

As with all of our work, we hope this report helps to make your job a bit easier and helps inspire innovation.

Thanks for reading.

From the sponsor

Being the supplier to two-thirds of the Fortune 100 companies and more than 90,000 businesses, institutions and government agencies across the United States we get to see energy and sustainability trends from a unique perspective.

Across the country, companies and agencies are grappling with how to make short-term decisions with long-term plans in a world of economic, policy and technological uncertainty. In response, energy and sustainability managers are looking for new ways to reduce consumption, limit emissions and utilize data to plan, forecast and manage their energy needs. That is one reason why companies from hospitality to manufacturing are now exploring creative ways to pay for efficiency projects through their electricity bill via innovative programs like Efficiency Made Easy.

Constellation Energy

www.constellation.com

But, even in today's economic climate, many corporations and agencies continue to search for affordable, reliable and sustainable energy solutions as a way to improve brand, or comply with goals and mandates.

We see many commercial and industrial customers implementing on-site solar installations that give long term price control and contribute to sustainability goals while government agencies are now engaging in public-private partnerships to implement 'outside the box' contracting vehicles to meet net-zero goals and renewable energy mandates.

Load Response is gaining more and more attention as businesses gain more insight into and control of their electricity demand. Some customers are taking the revenue generated from load response programs and re-channelling it to pay for additional efficiency projects. Many are implementing enterprise platforms like VirtuWatt™ that gives them real-time, site-specific, energy usage data and real-time market prices from Independent System Operators. Customers are now managing site-level demand centrally and can submit bids in Demand Response markets 24/7, even from a smartphone.

And finally, energy procurement is undergoing a paradigm shift. Energy managers and financial officers are no longer content to leave money on the table or risk budgets to arbitrarily timed one or two-year fixed price contracts. More companies are signing up for SMART data-driven programs like i2i that analyze past usage, forecast potential scenarios and build dynamic procurement plans that help take advantage of energy markets.

It is because we at Constellation believe that innovation, data and insight are the paths toward greener and more efficient energy future that we are proud to sponsor Environmental Leaders' 2012 Insider Knowledge Report. As a sponsor, we have no editorial input, but we are delighted to help deliver this valuable information.

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energy management

We began offering services through our Energy Group to **help clients cut their energy costs** and GHG emissions.

These services included the preparation of action plans and the implementation and financing of energy efficiency projects as well as recommendations and technical validation for energy reduction projects. For example, two major clients benefited from having an energy efficiency audit of their plants. The first audit, conducted for a large aerospace manufacturer, involved, among other things, reviewing a boiler and vapor network, and making recommendations to improve the energy efficiency at one of their plants.

Elaine Tassoni

Cascades, Inc.

www.cascades.com

The Cascades Energy team identified 13 actions allowing for a possible reduction of GHG by 24 percent. The second audit, conducted on behalf of a large supplier of agricultural grains and seeds, uncovered opportunities related to its use of compressed air that can reduce electrical consumption by up to 30.7 percent – a level that means its investment would be recuperated in just one year.

In July 2011, **CBRE achieved carbon neutrality** for its global 2010 operations. CBRE invested in a variety of carbon mitigation projects around the globe.

Our Australian business went beyond the parameters of our global program to achieve certification under the National Carbon Offset Standard (NCOS). This is the first government-regulated definition of carbon neutrality in the world. CBRE Australia offset emissions from electricity, fuel, air travel, paper and waste going to landfill.

Rebecca Pearce

CBRE

www.cbre.com.au

We have also committed to reducing our carbon footprint by 5 percent in 2011. Through our offset purchases we have invested in projects with significant environmental and community benefits such as clean and alternative energy projects (India and Russia) and efficient cook stoves for Cambodian and Ugandan communities.

In Australia the carbon neutrality program and NCOS certification gave us a worthy reason to communicate with our people and clients about climate change and the steps that can be taken to mitigate our impacts.

Our corporate reduction goals have led to the development of a Sustainable IT program – including automated PC power down, virtual faxing and new printing protocols – and various energy efficiency improvements and emissions reductions involving behavioral and physical changes.

We also instituted a staff engagement and awareness program including the inaugural CBRE Green Day held across the Asia Pacific region on 8th December 2011.

This event engaged staff through interactive electronic and printed material, inviting them to experiment in “greening” their behavior for one day, with a view to promoting sustainable change. CBRE Green Day also engaged local businesses, building owners and fellow tenants of our office buildings and will be expanded in 2012.

Toyota NZ was an early adopter of the ISO standard carboNZero program and is the first car company to achieve this certification in New Zealand. It has been carboNZero certified since 2006, and CEMARS (Certified Emissions Measurement And Reduction Scheme) certified since 2009.

Chris Rook

carboNZero Holdings Ltd
www.carbonzero.co.nz

These steps have been taken partly in support of its parent company's global commitment to environmental leadership, but have been driven largely by local management, initiative and enthusiasm.

The steps led directly to energy savings in excess of \$200,000 and triggered a search for other efficiencies, leading to savings of over \$2 million to date in travel costs alone between 2006 and 2010, compared with 'business as usual'.

In the Canadian telecom industry where energy management has yet to be embraced, we recently took a bold step forward to strategically and proactively attack energy waste.

Our executives signed-up to a 10 year commitment ending in 2020, having an aspirational goal to eliminate the equivalent of over half TELUS' national energy consumption in 2009.

Hitoshi Suzuki

TELUS
www.telus.com

Forming one of the key foundations within our Climate Change Strategy, we established an enterprise-wide energy management program with an executive committee to oversee targets and projects.

2011 saw our first year of execution and, as is true with any major culture-changing program, we had a bit of a rocky start but quickly picked up steam as organizations began to embrace the new strategy.

We closed out the year with over 200 energy conservation projects implemented including, for example, decommissioning equipment, virtualization, retro-commissioning, free-cooling installations, high-efficiency equipment retrofits, and building consolidations.

Annual operational cost savings totaled an approximate \$6 million, with annualized energy reductions of close to 55.5 million kilowatt-hours.

As a global manufacturer and provider of print and related multichannel products and services, we use energy throughout our organization from the computers in our administrative and premedia areas to the giant presses and finishing equipment on the manufacturing floors.

Tom Estock

Quad/Graphics
www.QG.com

We use energy in infrastructure equipment, such as high-pressure air, chilled water, dryers, solvent recovery for the rotogravure printing process, and trim waste.

Add to that the systems that illuminate our facilities and regulate building temperatures, and the fact that we operate 24/7, and it means significant energy costs and intensity.

This also means there are many opportunities for us to conserve energy. To capitalize on those opportunities, we leverage employee involvement, innovative thinking and executive-level sponsorship. Examples of how we're conserving energy include:

- Retrofitting our production areas with high energy-efficient florescent lights and controls that

burn 50 percent brighter but consume 70 percent less energy. This is saving approximately 48 million kilowatt hours annually;

- Recovering heat from the solvent-recovery process to preheat boilers that generate the steam used in the gravure printing process;
- Investing in power-management software and enforcing corporate I.T. policy to automatically put thousands of PCs into “sleep” mode when they’re not in use (4,500 impacted PCs saves 1.26 million kilowatt hours annually);
- Capturing solvent from ink, fountain solution and auto blanket wash from the offset press drying process and using it as a fuel source; and
- Detecting and repairing leaks in high-pressure air systems to reduce the horsepower requirement for the most energy-intensive, self-generated utility in the industrial environment.

We continually investigate new options, too, like how we can recover and reuse the heat from press exhaust to preheat press dryers, or even entire buildings (or cool them through the use of a heat exchanger).

Our best lesson learned for 2011 was with outdoor lighting. For years we struggled to find a cost-effective solution to replace 1000w HID parking lot lights for retail applications. Up until recently, we would just step 1000w Metal Halide pole lights down to 750w Pulse Start and call it a day.

LED’s are often too expensive for retrofit projects, and liner florescent solutions don’t weather all seasons and all climates. This past year we retrofitted a car dealership parking lot that had two 1000w Metal Halide fixtures at the top of each 25ft pole, and two 400w Metal Halide fixtures half way up each pole, consuming 3,066 watts per pole including ballast consumption.

We replaced each of the 1000w HID’s with 500w Induction fixtures which consume 515 watts including the ballasts, and so dramatically improved the night time light levels of the parking lot that we were able to remove the two 400w Metal Halide fixtures half way up the poles completely, reducing each poles consumption by 66 percent.

This project was accompanied by over \$32,000 in utility rebates and tax incentives, saw a 22 percent average light level increase, and a 16.5mo ROI.

Brian Sokolow

Aelux LLC

www.aelux.com

Apply the rule of “KISS” and we’ll all be better off for it... That’s the common wisdom.

To the contrary, my experience in the energy efficiency and alternative energy arenas applied to Small to Medium Enterprises has shown time and again: This rule of simplification is being applied at significant cost.

Oversimplification yields sub-optimal results, lack of clarity in agreements, and in a failure to best use our precious social capital. There is a simple alternative: Paying attention at the front end.

SMEs rarely have the professional resources and budgets of larger entities and therefore must rely on their own judgment informed by advice from a myriad of contractors, vendors and utility program representatives.

This can actually manifest as quite the Wild-West free for all, with everybody looking to their particular desired end result and forgetting about the details.

The focus is on the sale, getting the system installed, the renewable energy credit counted, solving the immediate problem.

A lot of mis- and poorly informed information can easily creep in. In my work with SMEs I have run into lighting contractors who claim they “don’t need a light meter,” and PV system contractors who, benefitting from significant public subsidy, apply “enthusiastic” sales techniques to projects for which they lack meaningful building electrical load data, clearly derived PV system production information, and probably most glaring of all, any real depth in the

Peter Millar

University of Nevada, Reno

www.unrbep.org

analysis of energy efficiency opportunities.

Obtaining best results in implementation of energy efficiency and alternative energy projects relies critically on our attention to detail at the front end. As most of us working in the energy efficiency arena know, the results of our efforts are comprised of the sum of many considerations and effects.

Best results are best achieved by putting pen to paper and mind to task. Utility and Federal incentive supported lighting projects specifying “change T-12s to T8s” and half-page PV contracts for \$300K systems just don’t do it in my book. Not enough detail. There’s always time for simplification but it helps to have done the hard work first.

By example, a very “simple” lighting project such as the one we recently finished at a local automobile museum resulted in a load reduction of 173 MWh and a project ROI of over 76 percent. We took the time to qualify, compare and select the best product, doing A to B comparison trials, on location, over quite a few months’ time. The result was immensely satisfying: Greatly reduced energy use, excellent color rendition, lighting with the proper beam spread and the virtual elimination of time-consuming maintenance. The closest available alternative lamp would have used 20 percent more energy and presented problems with overly bright emitters... not a good thing in a museum where you hope to actually see the displays. That 20 percent refinement alone yields the equivalent energy output of a \$100,000 23 kW PV system, every year.

Was it worth it? I think so. And had we not done the \$37,000 lighting change out, the alternative PV system, supplying the same equivalent energy would have cost \$480,000, a good portion of which would have been paid for with public subsidy. There is a time for simplification, but if we are going to work well in reducing and managing energy use and production, we should always refine our thinking and consider the system details at the front end.

With savings totaling more than \$6 million on utility bills and 284 million kBtus of energy annually, the EPA’s Energy Star National Building Competition offers a rich inventory of best practices and successful strategies for improving the energy efficiency of commercial buildings.

Jean Lupinacci

EPA’s ENERGY STAR Program

www.energystar.gov

The following five best practices from the competition serve as great examples of how organizations can work off their own energy waste, engage the community, and provide models for others to follow.

Step on the Scale: As the saying goes, you can’t manage what you don’t measure. Without a starting “energy weight” followed by periodic weigh-ins, it’s impossible to know if you’re gaining or losing over time. By tracking and reporting energy use through Energy Star’s Portfolio Manager as well as other energy tracking tools, competitors had the necessary data to inform their next steps and keep everyone

engaged and accountable in saving energy. For example, Coal Ridge High School installed interval data reporting (IDR) meters that measure energy use every 15 minutes and had students report the data to the school community.

Keep an Eye Out for Innovation: Now more than ever, the market for energy efficiency is changing at an incredible pace and savings can be found in small and large ways, from small technology purchases to larger renewable energy projects. For example, the University of North Carolina found a simple way to help students save energy and water – the shower timer. An innovative application of an old idea, the shower timer is an inexpensive way to educate and help students curb long showers. Several other competitors tracked the contributions of their photovoltaic systems and purchased green power. When implemented together, energy efficiency and renewable energy projects can pack a powerful one-two punch.

Remember Your ABCs and 123s: There are basics to saving energy that sometimes can be overlooked, but regularly returning to these fundamentals should be a part of any sound energy management plan. These basics include operational changes, lighting improvements, and making sure equipment is running as intended (retrocommissioning). For example, at Crittendon County Elementary School, the energy team worked with the custodial staff to shift from five 8-hour days to four 10-hour days during the summer months, so the school could be closed for three days each week. The University of Central Florida embarked on a more substantial improvement project by upgrading the lighting in their central campus parking garage to high performance T-5 florescent lights and LED watt lights, which cut their energy use by more than 63 percent in one year.

Tap the Power of the People: An important key to unlocking energy savings is raising awareness and engaging the community. From events and banners to online blogs and Facebook, the competitors found meaningful and fun ways to generate excitement and change behavior. For example, Sears gave a free pizza each week to the associate who did the best job keeping the outside doors shut and handed out fliers about the competition to interested customers.

Take a Comprehensive Approach: The most successful competitors had an organization-wide commitment to saving energy and took a comprehensive approach. For example, Fannie Mae took on several projects to improve energy efficiency by more than 30 percent, including retrofitting interior lighting, replacing 50 year-old heating boilers with new high efficiency units, improving the high efficiency air filtration system, adding variable speed drives to new higher efficiency domestic water pumps, gathering energy performance data for the multifamily marketplace, and developing innovative financing mechanisms for multifamily and commercial buildings.

It shouldn't come as a surprise that the lighting industry is continuing to experience innovation – for several years now, LED technology has been touted as an energy efficiency savior.

Josh Slobin

Daintree Networks

www.daintree.net

In 2011, though, the focus for efficiency in lighting began to shift from solely hardware (the lighting source, like LEDs) to software (how lighting is used.)

Lighting is the second largest consumer of energy in buildings, and represents about \$200B in energy spend annually. More efficient light sources certainly help – but that doesn't turn off the lights at night, or

dim them when they're not needed. Only intelligence can do that.

The lesson here is that there's no single way to be efficient. Even within the field of energy-efficient lighting for commercial buildings, it's a combination of technologies and strategies that will yield the most sustainable results.

When companies are looking into energy savings projects, be sure to investigate what rebates the local utilities have available. Many larger utilities will have rebates related to lighting, HVAC, air

compressors, and renewable energy upgrades. Many of these include the equipment, materials and labor.

Chad Sanderson

Fike Corporation

www.fike.com

We have received rebate credits on our utility bills for over \$15,000 for lighting upgrades and \$41,000 for a variable speed air compressor over the past 3 years. These rebates create scenarios which make energy efficient equipment purchases and installations more

feasible due to the quick return on investments. Credits are typically on the utility bill within 2-3 months after project completion.

I have had the pleasure of conducting many energy Treasure Hunts (3 day event of cross functional teams identifying ways to improve energy efficiency through operations and energy program development) for a multitude of companies over the past year.

Bruce Bremer

Bremer Energy Consulting Service, Inc.

www.BremerEnergy.com

We found operational energy savings that ranged from 3 percent of total annual energy spend to 17 percent, with an average of less than 6 month payback. There are so many opportunities available to improve current equipment operations which equate to no cost or low costs.

These treasure hunt activities reap many benefits: identifying low cost operational kaizens, employee engagement and education, best practice sharing and building sustainable energy programs, just to name a few.

Companies are starting to gain a better understanding that energy reduction is not just about cost, but also about energy reliability and environmental concerns. An energy program has to be sustainable, whether it is being developed using examples from Energy Star, ISO 50001 or others.

The concept is about teams working together horizontally across an organization and not in vertical silos. Behaviors are starting to change to understand that the process or method we use to improve the energy footprint is most critical and the results will follow.

Many companies, large and small, are making great strides in their sustainability initiatives.

I'm concerned most though about a class of companies which seem to do many "good works" and get accolades for their legitimate efforts, but when you look behind the curtains a bit you find that they have but a weak framework in place to support their sustainability initiatives and programs.

Some dart from one high profile project to the next, all good and worthy efforts, but usually led by a single champion, or at most, a small select team. When that champion moves on to another position, not necessarily even at another company, the sustainability initiatives are in danger of faltering and taking three steps backward.

Why? There's no framework for the programs to sustain themselves; too many one-off initiatives and no management system (MS) in place for spurring continuity and longevity. And at worse, the lack of a formal management system, like an ISO 14001 EMS or OHSAS 18001, means that company may in fact be lagging in some of its basic EHS regulatory compliance requirements.

I've personally witnessed this very condition at several highly visible corporate brands – no names.

I confess that I view the world through MS-tinted glasses. But the alternative to taking the time, trouble, and management commitment to implement some sort of formal system and associated culture is not a pretty sight either.

As public and supply chain reporting requires increased transparency and third-party scrutiny, some corporate programs will be exposed for their weaknesses, to the probable embarrassment of the brand holders, and discouragement of employees and stakeholders alike. A totally avoidable situation.

Dennis Sasseville

Normandeau Associates, Inc.
www.normandeau.com

A management system need not be destined for external-certification, although there's much to be

said for such approaches, but it does need to be formal, established, recognized, utilized by employees and it must engender management's full support to be effective and provide corporate value. Some firms choose to brand their corporate sustainability programs with catchy or memorable names. Xanterra Parks and Resorts coined "Ecologix" (with a stylized "X") for their national program – and I give that choice a definite thumbs up as one that is identifiable to external stakeholders but also seems to resonate with the company's employees.

Just recently while on vacation I was at the front desk of a Xanterra lodge in one of our National Parks and overheard the desk agent enthusiastically explaining to another lodge guest about their Ecologix management system. Many corporate sustainability managers long for such visibility and integration for their own initiatives. But on the flip side, a number of companies I've worked with are reluctant to try and brand a program, having had one too many corporate roll-outs (with cute names or acronyms) fall unceremoniously into the flavor-of-the-month dustbin with good-riddance snickers from the troops. That type of situation is understandable as well. The initiative's name is not the end-all and be-all.

I am frequently reminded of a 2006 article in Quality Progress magazine where six-sigma instructor and consultant Edward F. Phillippe described the push-back he was getting from a client company, largely hung up with the term "six sigma" itself, not so much the concept. His exasperated advice to his client, "Call it Fred" if you must! The take-away lesson is to stick with the heart of the initiative while finding ways to work within your own corporate culture. And seriously consider the value of a formal management system approach to avoid being left with just short-lived random acts of sustainability.

The City of Norfolk's Central Energy Plant operators weren't certain they could meet goals for voluntary Demand Response last summer – especially with the energy plant undergoing major construction – but they did.

Denise Thompson

City of Norfolk
www.norfolk.gov

Demand Reduction programs offer cash incentives for temporarily reducing electricity use when demand could outpace supply. For Norfolk's Central Energy Plant, which powers the entire Civic Center Complex, these payments are expected to total

more than \$6,000.00 the first year of the program.

The City's SCOPE arena, which has hosted the Mormon Tabernacle Choir, the Broadway musical "The Lion King" and the Admirals hockey team, along with Chrysler Hall, home of the Virginia Symphony, also participated in the program and did even better: their payments will total nearly \$9,000.00.

The money will be used to continue much needed lighting efficiency upgrades in these two entertainment venues.

Typically, peak demand times correlate with high ozone or smog episodes. Reduction in electricity consumption during these peaks helps partially ameliorate these local environmental problems. Reduction in energy use can create important carbon and climate change benefits, too.

Demand response also can reduce or defer new power plant development, and may lead to greater optimization of transmission and distribution capacity.

Voluntary electricity demand response programs allow the City to manage its energy consumption during peak hours and save on energy expenses.

Norfolk's Department of Utilities switches over to diesel generators at voluntary times when electricity costs reach or exceed target levels. There is no penalty for failing to reduce consumption when requested to do so, and the more frequently the City goes off the power grid, the greater the savings. Last year, payments to the Utilities department totaled more than \$300,000.

Greg Ness, VP of Marketing

Vantage Data Centers

www.vantagedatacenters.com

As data centers consume more than 500 kW of power, energy efficiency becomes a significant business issue. At 1MW and higher, energy efficiency becomes a strategic operating issue.

auditing & reporting

In the process of developing the greenest possible products for EcoTensil, I have learned the importance of using only certifiable claims and consistent language in communicating the greener aspects of our products to achieve clarity and consistency in the industry.

Peggy Cross

EcoTensil, Inc.

www.ecotensil.com

I have also found that we all need to be publicly educating and promoting the terms and certification that are meaningful.

At first I found the process of compliance daunting; it is expensive, takes a long time and one has to be sure of all the product components because they

can't be changed once you have started testing.

But I came to understand quickly that achieving third-party verification is what will set my products and company apart.

In EcoTensil's case, we submitted our paperboard sampling spoon, the EcoTaster Mini, to ASTM D6868 to verify its compostability and use of only FSC-certified paperboard.

We look forward to getting BPI certification next. We realize the similarity between the standards that were developed to define which food products can legally be labeled as "organic" vs. "natural," and the standards and certifications are needed to accurately define sustainability.

We are now highlighting and educating the public about ASTM compliance on all of our literature, press releases and media interviews, promos and general networking, to advance the awareness and education process.

We have created and disseminated a comprehensive article and infographic defining the difference between biodegradable and compostable products.

At trade shows, we distribute freestanding compost bags for use in booths that clarify this difference as well.

In assessing how well companies have performed in reaching carbon reduction targets, it has been promising to see that corporate climate scores have improved 54 percent on average since 2007.

Mike Bellamente

Climate Counts

www.climatecounts.org

What's more encouraging is that 64 percent of companies improved their standing from 2010 to 2011.

The mounting evidence suggests that climate change is being addressed at the highest levels of business, which has spurred new methods for

assessing climate risk, reducing waste streams and increasing direct and indirect operational efficiency.

This year 17 of the largest 20 companies assessed demonstrate what we consider to be a "striding" approach to climate leadership by scoring 50 points or better on our scorecard. As a frame of reference, the largest 20 companies we score represent 21 percent of the Gross Domestic Product (GDP) in the U.S.

Indirect or 'scope 3' emissions are a consequence of the activities of the reporting company, but occur at sources owned or controlled by another organization, for example raw materials extraction and distribution by a third party or from a customer's use of a particular product. An important part

of tackling scope 3 emissions is to understand which parts of a company's operations are responsible for the greatest proportion of emissions.

Hugh Jones

Carbon Trust Advisory

www.carbontrust.co.uk

Our research has found that 40 percent of multinationals have taken steps towards addressing the indirect carbon emissions resulting from their

extended value chain. Over the next three years, we expect this to increase to 84 percent and impact business of all sizes.

If 2011 saw organizations starting to address this area, 2012 will see more widespread action as companies recognize that reducing carbon in supply chains is an effective way to improve business efficiency as well as enhance environmental performance.

To put this in context for an individual company, GlaxoSmithKline revealed in its 2010 Sustainability Report that 80 percent of its overall carbon footprint comes from indirect emissions – with 40 percent through the sourcing and manufacturing of its products and 40 percent resulting from the use phase of its products, such as propellants in inhalers.

New regulations and the move to consumption-based accounting, together with voluntary schemes such as the Carbon Disclosure Project, are also encouraging companies to seek advice on addressing their indirect carbon emissions.

Our research also found that 50 percent of multinationals expect to select their suppliers based upon carbon performance in the future and 29 percent of suppliers could lose their places on "green supply chains" if they do not have adequate performance records on carbon. Conversely, 58 percent of multinationals will be prepared to pay a premium for lower carbon supplies in the future.

This past year, the **Illinois Institute of Technology** documented its current performance relative to the STARS (sustainability tracking and reporting system) national metric for campus sustainability performance developed by AASHE (the Association for the Advancement of Sustainability in Higher Education).

Joseph F Clair

Illinois Institute of Technology
www.iit.edu

This metric allowed us to take a snapshot of where we are in our efforts, and gave us an opportunity to reflect on the successes and challenges.

We gained two key insights as part of this process.

First, the only way to create powerful change is to not only allow but encourage and provide support for innovative thinking. That understanding lead us at IIT to create a Living Laboratory on our campus, whereby students, faculty and staff with innovative ideas can find a platform to test them.

Second, all significant improvement requires involvement at all levels of an organization. It is no longer a matter of top-down or bottom-up, but must always be both in order for change to remain sustainable within the organization.

2011 brought a huge lesson in the value of what type of data really matters in an evolving industry. The waste industry is conflicted, with multiple names for the same materials and different collection and processing standards for every municipality and program out there.

To help with this hurdle, our data team, which compiles and maintains all the information within the Earth911 Recycling Directory, updated at least 85 percent of our 1.3 million recycling resources by hand. This included updating contact information, verifying program viability, and creating uniformity in the way we talk about products so recycling is easy for consumers.

Our recycling directory is available for free to consumers across the U.S., so standardizing the names and keywords used for each material in the directory was a key improvement. For example, "PETE", "plastic #1", "PET", and "plastic bottles" all refer to the same thing. Expand that concept out to hundreds of additional material and product categories, and you've got a hill to climb.

Susan Larsen

Earth911, Inc.
earth911.com

Earth911 focused much of its attention in 2011 on standardizing packaging materials and electronics. Regarding packaging, it was important to distinguish that even slight changes in a product design affect recyclability. For instance, there is a different market for clear glass vs. brown glass, and also a different market for clear glass beverage containers and clear glass food containers.

There are also multiple elements that make up a consumer product, and all of these have different recycling markets. A plastic water bottle typically includes a #1 plastic bottle, with a #5 plastic cap and a paper label, and if purchased by the case at a store, #2 plastic wrap and a corrugated cardboard tray.

This year, Earth911 added 60 new packaging materials to account for these different combinations. For electronics, while the market for recycling is reasonably standard, most consumers don't think of an LCD television and a digital camera as the same.

Earth911 added 19 new electronics materials so consumers can identify exactly what type of product they are looking to recycle. One of the keys to recycling participation is making it convenient, so all of our updates harmonized with this theme.

Standardization of terms not only helps everyday users find local recycling options more easily, but also helps the industry immensely. Now, anyone who creates packaging can access Earth911's data

to find out what percentage of their consumer-base can recycle it, where the holes are, and perhaps design products and packaging that are more likely be recycled. It's an important part of product stewardship, and having a way to utilize information like this certainly sorts the wheat from the CSR chaff.

The take-home here is, regardless of your industry, you have to speak a universal language and justify your stance with real facts. There are too many companies and individuals promoting fluff, rather than hard numbers. We think this is vital in enabling the recycling industry as a whole to get beyond just being "green" and translating to deeper economic savings.

Looking back on 2011, it was a year of change for the energy management industry as well as a year of vast learning. As major companies like HP, eBay, Akamai and Hasbro have identified the need

Leslie Bane

Hara Software

www.hara.com

to actively manage their energy and sustainability footprint and put goals in place for achievement, the ability to monitor and assess risk has been lacking.

With the shift in the industry from just data collection and aggregation to analytics, benchmarking and forecasting, first mover organizations are on the cusp of delivering on the promises they have made to their customers, shareholders and employees.

These major organizations are not only identifying their current energy spend but are putting measurable plans in place in order to ensure best practices, a competitive advantage and knowledge sharing across the organization.

We are seeing companies experience double digit savings on annual energy spend across various industries, including: high tech, life sciences, finance, retail and municipalities.

One customer in the High Tech industry with an annual energy spend of \$19M identified that out of its 53 facilities, 10 of them represented almost 65 percent of their overall energy usage. By targeting initiatives at these top 10 facilities, \$3.6M (or 19 percent) net savings in annual energy costs have been identified.

By taking the approach of working with top line as well as very granular data, Energy and Facility Managers are empowered to take action and effectively manage operational and capital expenditures that ultimately drive value back into their organizations.

From a lessons learned perspective, many are citing the visibility of data, ability to assess spend based on industry and internal benchmarks, and standardization of internal processes inside the organization as drivers of "best in class" energy and sustainability business practices.

2011 was an interesting year. Our biggest client has been going through rapid growth and change, even though the unstable economic times.

Bernie Wieser

Wild Rose Sustainability Services Inc.

www.wildroseservices.com

Our focus at the start of the year was EHS reporting improvements and development of behavioral safety metrics. In general we saw a move away from lagging indicators, and focus more on positive observations and data mining / trending.

Mid-year we were seconded to an operational management system, that was an extension to an EHS Management system (that was based on OHSAS 18001). It was exciting to extend the management

system to all operations, and produce process maps and generate value-add information to promote grass roots process change in a very different, practical way (as opposed to typical business process re-engineering projects.)

In 2011, UL Environment launched its Sustainability Quotient (SQ) Program to help standardize assessments of corporate sustainability performance. After nearly two years of edits, stakeholder engagement, re-edits, and pilot testing, the first standard upon which the SQ Program is based – UL 880: Sustainability for Manufacturing Organizations – was published.

Craig Coulter

UL Environment

www.sustainabilityquotient.com

Throughout the process of developing the standard and launching the SQ Program, we learned a lot, of course. But our biggest realization was that implementing a standard for corporate sustainability nowadays is like trying to implement safety testing

and standardization a century ago: it makes sense, and it's the wave of the future, but the way in which individual companies begin the implementation will vary.

Indeed, not all companies use the enterprise-level sustainability standard in the same way. We built a certification program to help procurement officers, investors, consumers, companies, and others understand and assess company performance against a common standard based on trustworthy, audited data. But in bringing UL 880 and the SQ Program to market, we realized that some companies simply aren't ready for auditing: either they don't have the control environment needed to do this in a cost-effective manner, or regulators and their customers are not asking for it yet.

January 2012 marked the fourth year that Akamai has tracked greenhouse gas emissions associated with our business operations.

Over this time we have found monitoring and controlling our carbon footprint to be a valuable business management practice.

Akamai's core business operations that contribute to our carbon footprint include running our global server platform, office operations, and employee travel and commuting.

Nicola Peill-Moelter

Akamai Technologies, Inc.

www.akamai.com

Like most companies and industries, Akamai's carbon footprint closely reflects our energy consumption and operational costs. Tracking our carbon footprint is an element of what we do as part of our sustainability program, and is seemingly

tangential to our core business of making the Internet faster for our customers.

But in doing so we are able to understand how and why we use the energy we use and focus on big payback targets.

This very process helps us think of ways to do things more efficiently – innovate!

Historically energy had been a minor component of our operational costs so it hadn't been prominent on anyone's radar.

However, energy prices have been on the rise while other aspects of our operational costs such as bandwidth have been falling.

Thanks to carbon footprint management, we now have the data to analyze usage trends and look at the cost implications. We can more easily evaluate our assumptions and identify opportunities both to improve operational efficiency and to lower costs.

Here's an example. Traditionally, we deployed our servers in racks based on the maximum power draw of a server as measured in our lab and the power supplied to the rack [# Servers/Rack ~ Rack Power / Max Power/Server].

An analysis of real-time energy data, however, showed that in many cases the server racks were using only a fraction of the supplied power. Since we often pay for the supplied power rather than the energy used by the servers, this was a clear cost inefficiency and an opportunity to realize significant savings by optimizing – based on real-time energy data – both the supplied power and the number of servers per rack.

We also look at the cost benefits of paying for the energy consumed, not supplied power, to ensure that our costs are directly keyed to our server operations.

Another benefit of tracking our carbon footprint has been that by leveraging our energy data we've been able to quantify the aggregate impact of server platform efficiency projects captured by an intensity metric: traffic per unit of energy. The intensity metric shows us that we have improved our efficiency by a factor of three as traffic grew six-fold. No longer seen as a tangential aspect of Akamai's business, managing our carbon footprint is helping us to better manage our business!

Shari's, a chain of 104 family-dining restaurants, has implemented a corporate-wide energy management program combining data management, audits and energy performance initiatives that provides a precise view of energy use across its restaurants.

Key lesson 1: Invest in research and data collection to make informed decisions. An emphasis on collecting all applicable data has helped us make strategic changes to restaurant operations across multiple locations, resulting in greater efficiency and reduced costs. Working with Ecova for utility expense management and energy management, we gained visibility into energy use and cost

information for each restaurant in its network. In the beginning of the process, we had the data necessary to reduce and control consumption; we just needed additional support to interpret and identify the most effective opportunities.

The team organized results by square footage, guest count and location, ranking each location's

monthly electricity and gas usage. These comparative reports revealed that often restaurants with similar square footage and foot traffic would exhibit vast discrepancies in energy and water use. From there, we conducted store and equipment audits at high-consumption locations. In addition, we monitored the most efficient locations to understand best practices and behavior.

Key lesson 2: Make energy management part of everyone's job. After identifying and quantifying the effectiveness of Shari's initial energy management efforts, the team made every effort to be sure that these changes would stick.

Through S.W.E.E.P., the Shari's Water Energy Efficiency Program, the team is able to communicate, share results and motivate staff at all locations across the company. An energy newsletter highlights the three most energy efficient restaurants during the previous period and shares how they were able to reduce consumption. This communication has been a key asset in educating the entire Shari's chain on efficiency strategies. The newsletter also provides restaurants with season-specific checklists of simple actions for increasing energy efficiency, such as changing temperature set points and harvesting natural

Jodenne Scott

Shari's Management Corporation
www.sharis.com

heat and light. To further motivate restaurant managers, we include utility expenses as part of the bonus calculation for General and Assistant Managers.

Here are some results:

- By temporarily adjusting the restaurant's menu to not use gas broilers, we saved nearly \$750,000.
- During the equipment audit, dipperwells – used for ice cream scoops – were running heated water 24 hours a day, seven days a week. Collectively, the wells accounted for 8 million gallons of water a year. We are now redesigning the system, which will save a projected \$200,000 annually.
- By installing aerators on faucets, we saved \$100,000 in combined water/sewer expense.
- We added motion sensors in seldom-used rooms, saving \$57,720.
- Upgrading to digital thermostats saved roughly \$31,000 annually.

From our experience of working with companies on their climate change strategies, we have learned that, as a company's understanding of carbon matures, they develop an independent capability to manage their carbon emissions and resource consumption as an integral part of their business operation.

Jamie Devlin

Greenstone Carbon Management
www.greenstonecarbon.com

In a mature organization, carbon is managed at the same level of granularity, analysis and reporting that are in place for other operational activities such as finance. In these companies, carbon management

is an accepted strategic risk and opportunity that is understood and managed across all levels of the organization from Board to energy manager and the wider employee group.

As carbon management matures, the involvement and responsibility of stakeholders tends to move up the organization to senior management and the Board. It is only when senior management grasp the true nature and impact of climate change on the organization that the focus moves from simply reporting to a comprehensive sustainability strategy that becomes an integral consideration for every business activity.

By embedding carbon reduction and climate change considerations into products, services and broader operations, innovation and mitigation of risks will be recognized by clients, employees and investors; and this will be reflected in the cost of capital and share values. Carbon management will soon become an expected and 'normal' strategic and operational management requirement of a well-managed and forward looking business.

The development of a standardized means to measure and report sustainability information is crucial to establishing transparency and validating sustainable policies moving forward. Serving as the organization that drives the creation of the set of sustainability standards that all other companies and organizations follow is no small feat, and it certainly comes with a few bumps in the road.

Bonnie Nixon

The Sustainability Consortium
www.sustainabilityconsortium.org

In the past year, The Sustainability Consortium has undertaken several strategies to make this crucial

aspect of sustainable practices, termed the Sustainability Measurement and Reporting System, a reality. One of the most important aspects of creating a sustainable set of standards is to ensure that a variety of interest groups are able to contribute and take part in the development process. Collaboration is key

to ensure that ambitious but attainable standards are established and that they are implemented on a global scale.

TSC members comprise corporations, nongovernmental organizations, academics, and governments, all looking to make significant impacts on sustainability in product supply chains. With the exception of a government intermediary, all of these stakeholders are represented in The Consortium's Board of Directors.

TSC made a significant global connection this year by establishing its European affiliate at Wageningen UR (University and Research Centre) in the Netherlands. Furthermore, incorporating Tesco as its 17th European Consortium member, along with the Tesco-funded Sustainable Consumption Institute at The University of Manchester, contributed to TSC's foothold in Europe.

The most challenging part of consumer product sustainability lies in the research conducted in order to understand the biggest issues within a particular good or industry.

The assessments conducted by The Sustainability Consortium are detailed analyses of products, from sourcing, to manufacturing, distribution, consumption and disposal. Product life cycles are vastly complex, and there is so much information that must be condensed into a single comprehensive report that it can be challenging to gather all pertinent information in a short amount of time.

In 2011, TSC's effort came forth with the welcomed completion of 10 Category Sustainability Profiles – overviews of various products that summarize the most relevant information to sustainability – and 50 product category dossiers.

strategy & leadership

It is truly staggering to compare the eco-conversations we are having today compared to just three to five years ago – proof that change can indeed happen very quickly.

Many Fortune 500 companies have infused sustainability throughout the organization so that it is everyone's responsibility to consider the environmental and social impacts of their products, services and operations. And, most have made headway in at least understanding, if not reducing, their environmental footprints. The effect is that the level of dialogue has become exponentially more sophisticated.

Consumers have changed, too. While they remained pushed and pulled in many directions, living greener (in some form or fashion) is on most consumers' radar screens.

The key to a successful consumer-facing eco-strategy is fourfold:

- 1.) most consumers still need a great deal of education,
- 2.) "green" needs to be made easy for them to participate,
- 3.) there should be limited trade-offs (between conventional and eco-choices), and
- 4.) companies need to align consumer benefits and unmet needs to specific consumer segments – even though 80 percent of most adults around the world can be considered "green," their motivations differ greatly.

Steve French

NMI

www.NMIsolutions.com

For those companies wanting to take the next step in consumer-based sustainability, it is only through the alignment of consumers' interest to company initiatives that success will be achieved.

Recognizing the potentially significant environmental and economic benefits that electric vehicles (EVs) can bring to Ontario, Ontario Power Generation sponsored the creation of Plug'nDrive Ontario, a not for profit coalition of electricity companies, auto makers, NGOs, governments, researchers and corporate partners.

Plug'nDrive is dedicated to the accelerating of the deployment of EVs in order to maximize these environmental and economic benefits.

Cara Clairman

Plug'nDrive Ontario
www.plugndriveontario.ca

Plug'nDrive has three key priorities, which are:
1.) to engage in activities that will raise awareness of the benefits of EVs;
2.) to conduct important research to fill current knowledge gaps that relate to the success of EVs; and
3.) to assist in the implementation of off-peak charging solutions with a focus on night time charging.

This initiative grew out of a project at OPG that is now a stand alone NGO with potential to become a key player in the development of EV infrastructure in Ontario.

Fourteen Connecticut businesses, many of which were in the manufacturing and defense industries, participated in a pilot program named Business Sustainability Challenge (BSC). The main objectives of the program was to help Connecticut's businesses improve their economic, environmental and social sustainability through responsible energy management, and to facilitate the integration of more sustainable business practices into all aspects of operations. The program was underwritten by the Connecticut Energy Efficiency Fund (CEEF). Before

Maureen Hart

Sustainable Measures
www.sustainablemeasures.com

BSC, CEEF funds were used primarily to subsidize efforts to add insulation and replace aging heating and cooling equipment and lighting. Two utilities, Connecticut Light and Power and The United Illuminating Company were chosen to administer the pilot. Fourteen companies took part in the program, three from the UI service area and eleven from the CL&P service area.

An online assessment tool, Sustainability Competency, Opportunities, Reporting and Evaluation (S-CORE) was used to:

- Establish a benchmark of the pilot companies' initial sustainability practices as well as a baseline against which future BSC cohorts could be compared.
- Facilitate networking and collaboration of the pilot companies, including sharing best practices and identifying common barriers or key leverage points for collective action.
- Better understand what makes companies successful at integrating sustainability practices.
- Identify additional needs for technical assistance and guidance from utility staff, sustainability experts and other resources.

One aspect of the pilot program was monthly meetings for 8 months. At the first meeting, S-CORE was used as a small group exercise to elicit best practice discussions around specific organizational functional areas.

These roundtable discussions were among the most popular activities. One representative from each company sat at each of a dozen tables and discussed one practice area, such as transportation and commuting. People got to hear what other companies were doing – a new bus stop in front of a factory building, a bike that was purchased as a gift by employees for an owner, and preferential parking for carpoolers. Other practice areas included “What are you doing in HR?” and “What is your senior management doing to make a business case for sustainability?”

Although the number of companies participating in the pilot does not represent a statistically valid sample, the assessment process highlights three key factors that point to an increased likelihood of companies successfully implementing more sustainable practices; they are:

- Readiness – There are enough people in an organization thinking about sustainability that there is at least some concept of it.
- Willingness – Sustainable thinking and actions have management’s support.
- Ability – An organization has the resources to take action (one company in the pilot actually went defunct during it!)

Perhaps the biggest successes in 2011 were two sustainability seminars that included participants from the entire customer base. This gave BSC participants a stage and allowed them to share success stories from the first year of the program. The program’s objectives have been met in part.

A majority of the participating companies benefited to some degree. Most continue to make progress toward more sustainable strategic thinking. Several have saved money and energy as a result of their participation in BSC. There is still room for improvement. Going forward, program leaders would like to explore how large companies are putting up barriers for their suppliers that may be preventing suppliers from being more sustainable.

Scattered throughout our north are numerous dumpsites, full of toxic and hazardous materials that have been left to decay; polluting the air, ground and water.

anonymous

Summerhill Impact

www.summerhillimpact.ca

Summerhill has connected with local leaders, government and industry to develop customized solutions that can work in the affected northern communities. Many of these customized solutions were developed through efforts to expand two national-scale pollution prevention programs (Switch Out and Retire Your Ride) north of the 60th parallel.

The following tips summarize some of the most useful lessons learned on Summerhill’s journey to bring environmental programming to new territory.

Tip #1: Use what you find in Pandora’s Box. Be forewarned – while investigating how to implement or expand an environmental program in the territories, you may find that your focus area is a small portion of a much larger environmental issue, or that there are other issues that seem more serious than your program’s goals. In our case, while researching how to implement Switch Out (our national automotive mercury switch recovery program) in northern regions, we stumbled into an understanding of a much greater, complex waste-management scenario facing northern Canadian communities. Initially, we worried that an overarching lack of infrastructure for managing waste materials in most northern and remote regions would make our program goals to recover one small part of the waste stream seem insignificant, but this turned out to not be the case. Rather, the key was to acknowledge the greater scenario, contextualize the program’s goals to prevent mercury pollution, and re-structure outreach so that it reflected the program as a part of a larger solution. You can’t ignore the greater problem, but you can exist within it. Moreover, doing so demonstrates that your organization

understands the challenges within the greater context, which is crucial to earning respect.

Tip #2: Use the parts available to make your program a well-oiled machine. It is highly likely that infrastructure or processes upon which you rely to make your initiative a success in the south will not exist or be available in the north. But missing one of these critical components doesn't have to be a death sentence for your program, so long as you have time to adapt. For example, during program expansion our preliminary research showed that the network of recyclers upon which both of our programs relied in the south, had never established in the far north for various economic reasons. Summerhill's solution was to identify who the next relevant group of people would be, if not recyclers, and how to fill the capacity gap so that execution would be possible. This meant adapting a different process, with different participants. Unfortunately timing didn't work out for the Retire Your Ride program, (designed to retire and recycle 1995 model year vehicles and older, and promote sustainable forms of transportation), which had shorter timelines, but Switch Out has had success in expanding to new networks. Lesson learned? Don't get hung up on how great your process-flow is in the south. North-south transferability isn't always possible and adapting and thriving will have the added benefit of showing off your organization's strength of ingenuity.

Tip #3: Create value wherever possible. Be sure to use your plentiful southern resources to bring value for the people of northern communities, beyond your own narrow focus. Even short consultations will reveal how you can leverage your resources to make your initiative more impactful. If you can affect another positive outcome at the same time as executing your environmental initiative, you will earn important trust, which is the first step to ensuring a longer-lasting legacy in a place with very few resources and very high turnover.

One of our clients, Goodwill Industries International, wanted to provide their local Goodwill agencies with the tools and knowledge to implement environmental sustainability.

Anca Novacovici

Eco-Coach Inc.

www.eco-coach.com

After evaluating their options and taking their limited resources into consideration, Goodwill determined that a combined top down and bottom up approach would be most effective. As a result, they developed the Going Green Initiative.

Goodwill decided to lead the Initiative and encourage the local Goodwill agencies to participate

in it, to promote faster learning and knowledge dissemination. Goodwill's approach resulted in the following:

- Formation of a Steering Committee comprised of seven CEOs from the local Goodwill agencies, along with other Goodwill staff, to lead the Going Green Initiative;
- Creation of workgroups with staff from the various local Goodwill agencies to focus on solutions for different aspects of sustainability, including green building, marketing, jobs, retail, waste/e-cycling, and contracts;
- Monthly meetings of the Steering Committee and separate meetings of the workgroups to identify the necessary priorities and tools;
- Development of an internal community page to store and share tools and information;
- Presentations at yearly meetings and conferences tailored for different audiences – from CEOs to employees involved in the mission of the organization; and
- Close coordination with the Going Green Initiative project leader from Goodwill Industries International and an external sustainability consultant from Eco-Coach Inc.

The program is now in its fourth year and more than 75 percent of Goodwill agencies have some

environmental initiative in place related to sustainability.

Two takeaways:

- The bottom-up approach, which consisted of asking Goodwill agencies' staff interested in particular topics to help build the sustainability tools needed to educate their peers, worked only in part. The individuals participating in the workgroups wanted to learn, not to help build tools. As a result, the approach changed. It first changed to asking staff to help out on particular projects and tools versus having them participate on an ongoing basis. It later evolved to sharing knowledge with Goodwill staff and showcasing internal and external best practices, instead of asking staff to contribute content.
- The workgroups developed many useful tools but publicizing these tools proved to be the most challenging. After more than three years, some local Goodwill agencies had not heard of the Going Green initiative or were not familiar with the programs and tools offered to them. To address this issue, in the last year and a half, Goodwill Industries International has been featuring weekly articles in its internal newsletter on pertinent sustainability topics.

Finally able to move forward from a dominantly educational aspect, we still find ourselves trying to “convince” senior executives that sustainability is the way true leaders go. There has always been very enthusiastic support from the “green teams” and “younger” staff, which speaks to the “attract and retain the best and brightest” aspect of the benefits of pursuing sustainable business practices.

For senior management, we have always argued the business case, always spoken to the benefits, because we believe it is the only way to get the executives to buy in. We want to show them the money. Yet, still, the sales cycle is long and true leaders hard to find in a business climate that is in “survival mode.”

Karen Peterson

Greenomics Corporation, the Business
of Sustainability
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In a recent case, we worked with a national firm that has a rich history and many senior partners who are at the phase in their working careers that they have “seen it all” and do not wish to be “told what to do” by anyone. They know their business. But an analysis of the business found huge gaps between their younger employees' views, and those of senior partners, as well as how they were seen by perspective employees,

clients and peers. They were seen as missing true succession planning for when all of these senior partners started to retire. Not only in terms of working with current clients, but in attracting minds as exciting and innovative as these partners were in their “glory days.”

We felt the business case here is that the latest and greatest innovations now are going to be in sustainability. By entrenching sustainable business practices into the very culture of the organization they would move into the 21st century with the same innovative but practical intelligence as their firm was solidly known for, but with that attractive, sustainable shine that would bring them the new breed of innovators that would carry on the magic that made the firm as reputable as they were in the first place.

Of course the hardest part of providing a report like this is in how you impart your logic to the client so that they will accept it, embrace it and follow through. Always a challenge. The key in this is not to “tell” but to “compel.” If someone is fiercely competitive, sometimes its simply a matter of providing the list of their competitors that are embracing sustainability – in their hiring, purchasing and reporting.

Provide lists of contracts successfully bid on by competitors. Show lists of recent hires. Build a bonfire of compelling factors for them to warm their hands to and say – “Ahhh, I see.” Then all you can do is hope that the “believers” within the company keep that fire going after you leave. Its not always

the case, but hopefully you will have left behind enough of a spark in a solid, action oriented, report that if someone moves up the ladder in the near future and reads it, that they fan the embers with it rather than tossing it on, to be burned up leaving nothing but the ashes of another great report that goes nowhere and does nothing.

I am convinced that green revolving funds (GRF's) are becoming the future of cleantech investment for many organizations – ranging from universities to medical campuses to military branches to Fortune 500s.

A GRF issues loans within an organization to finance cleantech and sustainability projects that can generate monetary savings. The returns from these projects flow back into the fund (“revolve”) and are re-invested in future projects.

Joe Indvik

Dartmouth College

www.dartmouth.edu/~sustain/

GRFs are often managed by a committee of community members that review loan applications and oversee fund operations. My alma mater Dartmouth College is in the process of implementing a \$1 million GRF that is projected to produce a 30 percent ROI once it is up and running.

The number of universities with GRFs has quadrupled since 2008, growing to at least 47 by the end of 2011. This is not surprising, as funds that have been operational for a while consistently report annual ROI of 30 percent or more.

The Billion Dollar Green Challenge has recently been launched by the Boston-based Sustainable Endowments Institute to encourage and facilitate the establishment of GRF's.

But why use a GRF rather than make cleantech investments directly? Sadly, despite the massive cost-saving potential of cleantech investments (particularly energy efficiency), many organizations are stuck in the rut of thinking about them as a cost only. By definition, the “revolving” mechanism brings savings into the limelight and explicitly directs them into future investments, whereas they might otherwise have been simply absorbed into the operating budget and ignored.

On top of that, GRFs generate great PR buzz, bring stakeholders to the table in the loan application and discussion process, can be used to direct savings from cleantech projects into other sustainability projects that may not pay back, can be customized to fit the unique goals of a given organization, and make tracking performance metrics a breeze. Having helped design Dartmouth's fund and worked with several other organizations to establish their own, I would not be surprised to see the explosive growth of GRFs continue as organizations realize the value they can generate.

How many times have you seen or heard about a CEO or CSO setting corporate reduction targets for energy, waste or water without a clear, defined plan for achieving them?

John Hoekstra

Summit Energy

www.summitenergy.com

In 2011, Summit worked with a variety of clients to build bottom-up abatement strategies including achieving energy reductions, improving waste efficiencies, identifying water reductions as well as the definition of product improvement goals through life-cycle evaluation.

An exciting process led us to evaluate opportunities in the textile industry in Central America.

An extensive evaluation of the operating practices at multiple facilities resulted in the identification of behavioral and capital related initiatives that were used to define aggressive reduction targets across a number of sustainability metrics. The utilization of biomass for renewable energy from nearby palm husk and bagasse waste, biological-based wastewater treatment using natural lagoons and industry leading waste management practices including waste to energy helped inform a roadmap for achieving cost-effective reduction goals for key metrics.

It's critical to get buy-in from the "shop floor to the top floor" on sustainability initiatives and well-defined initiatives with a healthy ROI are the first step. Building (or validating) from the bottom up turns a lofty sustainability strategy into activity – and the more you can get global contributors on board, the more successful your program.

The Colorado Governor's Energy Office (GEO) and their consultant, Trident Energy Services, Inc. launched the statewide Main Street Efficiency Initiative (MSEI) program January 2010. The program concluded December 2011, and served over 30 communities and engaged over 360 small businesses, primarily "Mom and Pop" businesses located on "Main Street" or in areas of economic need.

The MSEI program was designed to help small businesses persevere and retain jobs by reducing direct energy costs through the implementation of low- and no-cost energy efficiency and conservation measures.

The most common measure pursued by businesses was lighting upgrades; this may have been motivated by the upcoming phase-out of T-12's

Emily Evans

Trident Energy Services, Inc.

www.tridentenergy.com

lamps and generous rebates offered by local utility companies. In a time of need, the additional incentive for business to pursue energy efficiency was a welcome relief for local contractors. Not only were we helping our local contractors but they were helping us as well. Their ability to market and present savings data as a

way to "sell" their services was invaluable to the program.

Many of our businesses became involved with MSEI through contractor referrals and word of mouth. GEO, community partners, and businesses also strengthened relationships with local utility companies.

Businesses were able to connect with GEO, meet with energy experts, and their utility company to discuss bills, usage and cost. During one such function, over 20 small businesses met with GEO/Trident, community representatives, and the local utility company and during the conversation, a monthly billing error of \$100 was identified and mitigated.

In some cases, MSEI offered the first and only option to receive subsidies for an energy efficiency project. In other cases, local utility companies offered generous rebate packages that simply had to be communicated to our business owners. For projects that could combine local utility incentives with those offered by the MSEI program we saw projects reimbursed from 50 percent to 95 percent, making the payback period drop from 2-3 years to less than a year or almost immediately.

Our main hurdle was promotion of the program. Our outreach and marketing period lasted longer than most had anticipated and when businesses were in the program many had to have constant assistance throughout. Businesses needed a "partner" to walk them through the program, whether this was their contractor or a program administrator. This program could not have been successful if it relied on a "help yourself" model. The longer outreach period prolonged the overall timeframe. We had anticipated that the entire program could be wrapped up within a year, but it better served the community by being available for at least a year, up to 18 months in some cases.

In September 2011, Legrand held its first Sustainability Summit to bring together all members of its sustainability teams and set goals for 2012.

Over a two-day period, Legrand associates brainstormed, networked and set goals for 2012. As members of the sustainability team, it was gratifying to witness our fellow associates begin to take ownership of the process a company undergoes to truly incorporate sustainability into the way it does business.

Susan Rochford

Legrand

www.legrand.us

Through guided facilitation, the teams were able to voice initiatives they wished to see at the company, but not get caught in the logistics behind bringing them to fruition. The group later discovered that each of these initiatives comprised individual pieces of a larger sustainability picture.

Lesson 1: By taking a “big blue sky” approach to idea generation, participants feel comfortable in expressing their most imaginative ideas. Individual team members brought different, yet real-world perspectives to group discussion to drive the creation of future sustainability initiatives. Teams relied on their knowledge and experience gained over the past year to move from lofty ideas to strong, achievable goals. While all participants had deep optimism that something new and exciting would come out of this exploration and thinking, the new sustainability goals were built on past goals and the prior year’s experiences.

Lesson 2: Goals based on past successes and failures do not signify reluctance to leave the comfort zone, but instead show that successful building blocks are best placed on a tested and sturdy foundation. As the goals developed, the synergies between the teams became more apparent with many of the top goals containing similar elements. Using a very simple ranking method, the teams were able to determine which goals to work towards in 2012. Many would agree that sustainability is built around core concepts such as energy efficiency and environmental and social responsibility, but each organization will take a different route to change the way they do business.

Lesson 3: Being a leader in sustainability isn’t always about doing it first but about taking the time to address issues, conquer challenges and aspire to be the best at what we do by defining the right goals for our company.

To help guide and assess CS efforts, we undertook a systematic and focused review of current academic studies and corporate practices, integrating the findings into a five-dimensional corporate sustainability framework.

Mehdi Amini, PhD,

Carol C. Bienstock, PhD

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The five dimensions of this framework are: 1.) business level application & external communication of sustainability activities/performance; 2.) scope of organizational focus; 3.) sustainability oriented innovation; 4.) economic/ecological-environmental/equity-social emphasis; and 5.) compliance stance.

Furthermore, we suggest that, within each sustainability dimension, there are four levels of sophistication, determined by the degree to which a

firm embraces aspects of each of the five dimensions of sustainability.

The first dimension of our sustainability framework suggests that CS efforts cannot be successful unless they are strategically integrated and communicated to the organization's stakeholders. Unsophisticated CS initiatives are executed at the tactical or operational level, with limited and relatively superficial communication about the initiatives and their outcomes. The most sophisticated organizations are intrinsically sustainable, recognizing the potential impact of scarce resources on a firm's strategic capabilities, and communicating highly detailed and substantive information on the firm's CS activities.

The second dimension focuses on the scope of organizational focus for CS initiatives. While the least sophisticated firms exhibit no interactions with the down- and up-stream supply chain partners, the most sophisticated organizations strive to integrate sustainability activities throughout their supply chains.

The third dimension of the sustainability framework emphasizes the fact that, while unsophisticated firms have no awareness of the relationship between CS and innovation, the most sophisticated firms are inherently aware of the synergy between innovation and CS, and thus embrace sustainable design.

The fourth dimension of the sustainability framework incorporates all aspects of sustainability: economic, ecological-environmental, and equity-social. The least sophisticated organizations tend to emphasize economic sustainability only, while highly sophisticated organizations embrace a triple top line approach, encompassing economic, ecological-environmental, and equity-social concerns from the beginning of their strategic decisions and design processes.

Finally, the fifth dimension of the sustainability framework addresses compliance stance with respect to corporate sustainability efforts. The least sophisticated organizations' CS efforts only seek to satisfy currently sustainability regulations. As organizations become more sophisticated, their CS activities shift from simply doing what they must to comply with regulations to being industry leaders in the development and evolution of sustainability regulations.

When I assumed the position of Americas Director of Environmental Sustainability in 2008, one of our goals was to contribute to a culture of sustainability at Ernst & Young.

Leisha John

Ernst & Young

www.ey.com

My counterpart in the United Kingdom calls it creating a culture of "green thinkers and doers."

Of course we want our people to think about environmental sustainability in our own offices, but we also want them to be attuned to sustainability as a business issue that will have a significant impact on their clients' businesses for decades to come.

As part of this strategy, in 2009, we sent our first team of Ernst & Young volunteers to Costa Rica to participate in an Earthwatch expedition and provide skills-based volunteering support to the Coop Tarrazu, the local cooperative of coffee growers. Since it was our pilot year, we invited participation from the Climate Change and Sustainability Services team and our EcoCare (local office green teams) network.

Except for the team leader, we required applicants to be below the manager rank, as we were especially focused on engaging our early career professionals. Frankly, we were pleasantly surprised when a dozen people said they would brave the elements (lots of insects and some pretty challenging terrain) and take part in the expedition – and we were thrilled when they returned and voiced strong support for expanding the program.

Fast forward to 2011, the Ernst & Young-Earthwatch Global Ambassadors Expeditions are now in their third year. This past spring, we had more than 160 applicants for 18 slots, making it harder to get into Earthwatch than it is to get accepted to Harvard!

And we expanded to Brazil which gave our people the opportunity to address the environmental issues of this dynamic emerging market. Our Americas program also served as the template for a recent pilot in India that involved Ernst & Young employees from across Europe, India, Africa and the Middle East.

I'm proud of what our volunteers accomplished through their Earthwatch expeditions. They gained hands-on experience in environmental field research and helped their hosts address complex business issues like pricing, forecasting and reporting. They worked as part of a global team (we had representatives from the U.S., Canada, Israel, South America and Mexico) which helped them expand their Ernst & Young network while enhancing their cultural understanding and developing a more global mindset. And they gained hands-on experience working with senior business leaders, which helped them build confidence as communicators and business advisors.

But I'm even prouder of the impact they have made since returning from Costa Rica and Brazil; they have brought a heightened awareness of sustainability to our clients and to our own operations. Returning Earthwatch volunteers who are on our Climate Change and Sustainability Services team have assisted clients in developing their environmental sustainability strategies and putting the structures in place to act on them. They have contributed to carbon footprinting projects and are involved in CSR reporting. They have published articles on topics such as Internal Revenue Code (IRC) 179D (Deduction for Energy Efficient Buildings) and contributed to white papers on a range of sustainability issues. And they have supported efforts to gain LEED certification for some of Ernst & Young's own offices and re-energized EcoCare efforts in their local offices. In short, they have stepped up as leaders who understand the integral role that sustainability plays in our future. I can't wait to see what the Ernst & Young Earthwatch class of 2012 brings to the table.

Historically, managing a successful public company required the adroit ability to balance the often competing interest of three primary constituents: customers, employees, and shareholders.

If you focus too much on employees (high salaries, lavish benefits, etc.), then the customers and shareholders are not happy; if you focus too much on short-term shareholders return, then your employees or customers may leave you.

Gary Niekerk

Intel Corporation

www.Intel.com

If you focus primarily on the customer, which many of today's most successful companies do, it's believed this will also meet the needs of employees and shareholders; (i.e., happy customers buy your products which in turn drives increased compensation for employees and shareholders).

However, today there is another stakeholder that needs to be minded, and that is the community or society. If you do not successfully address the needs of this "4th stakeholder," you can come under attack and jeopardize your business. We have seen very successful, customer-centric companies fall into this trap of ignoring the greater community needs around the supply chain, human rights, environmental, etc., to the potential demise of their overall business success.

The challenge here is it's difficult to consistently satisfy the customer's expectations, let alone all the other potentially competing stakeholders; and this is why the Fortune 500 list in 2025, will look a lot different than today's.

In November 2011, for the first time, we published our own model of effective behavior change. Unilever's Five Levers for Change is a practical tool. It is a coherent set of principles, which, if applied consistently to behavior change interventions, will increase the likelihood of having a lasting impact.

Flip Dotsch

Unilever

www.unilever.com/sustainability/news/news/inspiring-sustainable-living.aspx

A huge part of our environmental impacts come from how people use our products; two thirds of the greenhouse gas impacts across the lifecycle and about half of our water footprint is associated with consumer use.

So inspiring consumers to adopt new sustainable products and behaviors is fundamental to achieving the goals set out in the Unilever Sustainability Living Plan.

We published our approach because we think that there are wider benefits from sharing our work with others.

We also invited leading experts from around the world to contribute their thoughts on the subject in a publication.

It is estimated that restaurants and hotels in the United States generate three billion gallons of waste cooking oil each and every year, some of it disposed of in sewers and/or landfills.

This almost entirely untapped resource could be used for energy recovery – when converted into biodiesel – a domestic, renewable fuel. The use of biodiesel fuel could help develop energy independence since most diesel is imported from overseas.

Olof Hansen

U.S. EPA

www.epa.gov/region09/biodiesel/

Waste cooking oil is converted into biodiesel fuel, through filtering and chemical refining called transesterification. The use of the biodiesel fuel reduces vehicle emissions significantly (up to 80 percent reduction of asthma causing soot and

reductions of Green House Gases). It also offers an alternative to petroleum-based diesel. A project in which restaurants have their waste cooking oil removed for free would provide a win-win scenario in which both industry (restaurants and biofuel manufacturers) and the environment benefit; and serve as a model for other communities across the country to finally tap into the vast, latent potential of waste cooking oil.

With a U.S. Environmental Protection Agency innovations grant (\$75,000), Ecology Action (EA) in Santa Cruz, Calif., coordinated with Energy Alternative Solutions, Inc., Salinas Tallow, Coast Oil, and the City of Santa Cruz a waste cooking oil collection project called "from fryer to fuel." Used cooking oil (sometimes dumped down the drain) was collected from area restaurants and converted into biodiesel to fuel municipal vehicles. The project managed by EA relied on Energy Solutions, Inc. as the local biodiesel production plant; Salinas Tallow for the storage, collection and pretreatment of fryer oil; Coast Oil for blending and distributing the biodiesel fuel; and the City of Santa Cruz for testing and using this fuel in their vehicle fleet.

Here are some of the results:

- Collected 80 thousand pounds of high quality waste cooking oil from 31 restaurants in eight weeks, enabling production of approximately 32,000 gallons of B20 fuel (equivalent to 757 barrels).
- Emission reductions of 86 percent for GHG emissions for biodiesel derived from waste oil feedstock based on lifecycle analysis.

- Reduction of sanitary sewage overflow events of which 80 percent in the US are caused by Fats, Oils and Grease (FOG).
- Production of biodiesel from recycled grease is 4 times more energy efficient compared to virgin feedstock.
- Achieving cost savings since 75 percent of price of production of biodiesel comes from buying the feedstock.

Bob Langert

McDonald's Corporation

www.mcdonalds.com

www.aboutmcdonalds.com/mcd/sustainability/signature_programs/ngo_collaborations.html

I am always amazed at the power of collaboration with NGOs and external experts. McDonald's, as part of our 20 year anniversary of working with EDF to reduce waste in the early 90s, summarized all the ensuing collaborations we forged to address complex societal issues that involve our restaurant business.

The big lesson learned over the years is that rolling up our sleeves to work "across the aisle" with NGOs is a very healthy, constructive process, where both organizations gain benefit – and most of all, positive impacts for the planet result.

The degree of success of an organization's sustainability program is significantly dependent on how well the organization utilizes change management to achieve the desired goals and objectives.

Change management is the structured approach, tools, processes, skills and principles for managing the "people" side of change. Transitioning to a sustainability culture requires that the entire

organization become engaged and energized. The "top of the house" must fully and strongly support the effort and robust collaboration, both internally and externally, is crucial to accomplish the necessary changes.

The transition to sustainability also requires changing the following:

- Operations – Changing the way the organization interacts with and affects the external environment

(communities, stakeholders, etc.).

- Culture – Changing the way the organization interacts within it's internal environment (thinking, beliefs, decision-making, values and behaviors).

To engage the entire organization in achieving the necessary changes, the following is required:

- Clarity around sustainability definition and vision, goals to be pursued and how progress and results will be measured;
- Awareness of the need for change and the benefits of change;
- Desire to participate, engage and support the change;
- Knowledge regarding how to change;
- Ability to acquire and implement required skills and behavior;
- Reinforcement to sustain the change; and
- Managing change is about Leadership.

A changing workplace and environment is now the norm. Businesses that have change management competency are more efficient and successful at achieving goals and targets.

Ronald J Slember

Environmental Resources Management

www.erm.com

BetterBricks, the commercial building initiative of the Northwest Energy Efficiency Alliance, used behavior change principles and everyone's love of a good competition to encourage commercial building owners and managers to benchmark the energy use of hundreds of buildings and millions of square feet of office space in Oregon and Washington.

Phill Guay

NEEA's BetterBricks program
www.betterbricks.com

To reach out to participants, BetterBricks imitative formed a strategic partnership with the Portland Building Owners and Managers Association (BOMA) and BOMA Seattle King County to deliver the competitions. This alliance validated the competitions with the commercial real estate audience, an industry that is notoriously skeptical of outside green initiatives.

In 2006, BOMA Seattle King County challenged the Puget Sound real estate community to the Kilowatt Crackdown competition. With over 130 buildings participating, building operators benchmark energy use and implement projects that collectively are on track to save millions of kilowatt-hours. In 2012, the competition is poised to benchmark and reduce energy in 30 percent of the Puget Sound's office market.

In 2010, BOMA Portland and NEEA deployed Carbon4Square – their most complex and ambitious competition to date. Carbon4Square is the first building operations challenge in the country that measures and reduces carbon consumption through the framework of waste, water, watts and wheels.

Both competitions provide a platform for behavior change influencing how organizations assess energy consumption. Influencing behavior through peer pressure, Kilowatt Crackdown participants receive an unbiased ranking of their building's energy efficiency with a private report detailing their overall market ranking. The game-like nature of Carbon4Square introduces benchmarking and sustainability as accessible opportunities with a clear roadmap for success.

The results are impressive. Winners for the 2011 Kilowatt Crackdown were chosen from 71 competing properties, representing over 21 million square feet with commercial properties in 17 cities across the Puget Sound office market. The average Energy Star rating among competing buildings increased from 71 (Dec. 2009) to 75 (Dec. 2010). Compared to the national average Energy Star rating of 50, Crackdown participants outperformed much of the nation's building stock.

Carbon4Square is currently engaging 74 building teams that represent more than 25 percent of the entire Portland office market and 14 million square feet of office space. All Carbon4Square building teams are benchmarking with ENERGY STAR Portfolio Manager and 71 have conducted energy audits. Building teams are also incorporating broader sustainability actions as 52 teams are comprehensively tackling waste, water, watts and wheels. Most importantly, property owners now have greater insight into their operations and access to resources to reduce energy consumption.

CFOs are uniquely able to influence an organization and build a consensus toward action. Revenue

Steve Starbuck

Climate Change & Sustainability Services,
Ernst & Young LLP
www.ey.com

generation, cost reduction and risk mitigation are typically part of the CFO's main job of preserving and increasing shareholder value. Sustainability reports often cover all of these critical elements. Accordingly, CFOs must pay attention to the content and credibility of the information contained in those reports.

Savvy CFOs will advocate responsible behavior and transparent reporting, and will anticipate growing pressure to become more involved in sustainability issues that affect the organization's finances.

Here are five actions CFOs can take now to enhance corporate value through sustainability:

- 1.) Actively pursue a sustainability and reporting program. Increasingly, companies recognize that implementing the procedures needed to measure, monitor and report on environmental sustainability issues helps them create value, reduce uncertainty about future cash flows and profitability and enhance their reputation.
- 2.) Ensure that those responsible for sustainability matters do not operate in isolation from the rest of the enterprise – especially the finance function. The financial organization, through its accounting system, must provide the sustainability function with the information needed to do its job. That information should be timely, accurate and complete – the very same attributes that financial accounting information should possess.
- 3.) Enhance dialogue with shareholders and improve disclosure in key areas, particularly those related to social and environmental issues. Robust sustainability reporting can help with this.
- 4.) Ensure that directors' skills are relevant to the chief areas of stakeholder concern, including risk management tied to social and environmental matters. In particular, companies must communicate with shareholders. They could, for example, take advantage of the SEC disclosure rules around director qualifications to explain how the qualifications, backgrounds and skill sets of their directors contribute to overall corporate strategy, including risk mitigation.
- 5.) Consider using nontraditional performance metrics, including those related to environmental/sustainability issues. Doing so could help align compensation with risk. In addition to financial metrics, performance goals should align with overall environmental strategy, including clearly defined metrics relating to energy efficiency, water usage and the reduction of carbon emissions.

At Walmart, we know that being an efficient and profitable business and being a good steward of the environment are goals that can work together. Our sustainability journey began in 2005 when our CEO at the time, Lee Scott outlined three broad environmental goals:

Kim Saylor-Laster

Walmart

www.walmart.com

- To be supplied 100 percent by renewable energy;
- To create zero waste;
- To sell products that sustain our resources and the environment.

We've been working ever since under the leadership of our CEO Mike Duke to build a more sustainable company and create change. As the world's

largest retailer, we believe we have a responsibility to make a difference, and we are committed to using our size and scale to address pressing societal needs.

Throughout our journey we've discovered a few keys to success:

- 1.) Leadership and Support from the Top
- 2.) Set Challenging Goals – Even if you are not sure how or when you will achieve them, you will usually accomplish more than you ever thought possible.
- 3.) People Make the Difference – Assign high performing associates to work on sustainability projects and empower them to figure out how to accomplish them.
- 4.) Sustainability Must Make Good Business Sense – Approach sustainability projects from the perspective of the business to ensure they meet internal payback requirements and support the productivity loop.

There are people that want to eliminate the term, sustainability. Others insist on having a standard definition that will be used by all. I have found that there is a middle ground and that many people are turning to the umpire to find meaning to this widely used term.

Bob Pojasek

The Shaw Group

[www.shawgrp.com/industries/
environmental/sustainability/programs](http://www.shawgrp.com/industries/environmental/sustainability/programs)

UMPIRE is an acronym for the steps in the process of implementing a sustainability program in an organization no matter what term is used (e.g., CSR, corporate citizenship, social responsibility, etc.).

First the organization should use “structured conversations” to reach an Understanding of what sustainability means to every employee and the other key stakeholders.

Second, it is important that there be a means of Managing the sustainability efforts so that it does not limit itself to “random acts of sustainability” by uncoordinated green teams.

Third, it is important that the Performance of the sustainability program be driven with a “looking forward” set of leading indicators and measured with the materiality results of its performance (i.e., the ESG lagging indicators).

Fourth, the organization should Implement the quick wins throughout the organization and across the supply chain. This is where the biggest savings will come from.

Fifth, the attention of the sustainability program should be on operational, regulatory and reputational Risk management. Every organization spends a lot of money insuring against unacceptable risk. Here’s the chance to save even more money!

Finally, every organization seeks operational Excellence as an outcome of the sustainability effort.

A good governance structure will help unify the program by coordinating the UMPIRE elements that heretofore have been coordinated by separately operated “silos.” Attention to these six programs will go a long way to squelching the desires to turn away from sustainability or standardizing the definition and associated activities. Organizations are different in so many ways. However, this difference does not prevent them from finding a way to follow this simple acronym or other similar approach.

There are five simple steps you can take to help move your board from triple net interest to fast-track social change:

1.) Get permission to investigate commitment to social change:

- Rationalize the need to investigate impact of triple net initiatives, providing objective assessment of pros/cons;

- Address competitive advantage, mission advancement, areas where positive change could occur;

- Provide examples of areas of impact organization could deliver against (social, environmental, economic).

2.) Agree on areas where your organization could deliver most significant impact on social change:

- Show examples of metrics the organization can deliver against in each area of agreed upon impact;
 - Show how the program may evolve into the future and the degree of change possible/
- 3.) Prove areas of impact and degree of impact through metrics that represent actual performance:
- Show first quarter, first six-months, or first year results to prove triple net impact;
 - Convert to tangible impact, focus on significance of environmental/social change;
 - Project growth of triple net impact;

Susan Reed

EdgeDweller, Inc.

www.edgedweller.net

- 4.) Convert overall triple net impact at organization level to individual level:
- Analyze one year of overall results broken out at the individual sales referral level;
 - Measure how average referral from individual board members impacts triple net metrics – “the influence of one.”

5.) Make it easy to participate and celebrate individual success:

- Create simple to refer content templates for board to forward to referral candidates;
- Name referral and board program;
- Make board referrals a sales category with results included as a component of board reports;
- Measure, promote and celebrate referrals from individual board members and report triple net impact.

While the process is not rocket science, the results can be. In one program recently executed for client Tommy Nobis Center’s, Reworx – Ewaste Business, one average board member referral created 4 full time jobs, reduced government public assistance funding by \$28,800 and reduced e-waste by 200,000 lbs.

A little over five years ago, we articulated our energy and sustainability strategy by saying, “We will implement innovative yet proven cost-saving methods to reduce our energy use, conserve resources, and improve the environment.”

In the years since, we have pursued this strategy by:

- Regularly monitoring available methods, tools, and technologies to identify potential improvements in how we use energy and resources.
- Joining partnerships and achieving certifications to drive continuous improvement in energy use and sustainability.
- Using environmental thinking and careful analysis to select energy and sustainability initiatives in

Nelson Longenecker

Four Seasons Produce, Inc.

www.fsproduce.com

order of financial feasibility and economic return.

- Implementing chosen projects through solution providers and suppliers who share our environmental commitment and core values.
- Setting achievable goals and carefully measuring results to regularly assess progress.
- Sharing our efforts and results with customers, associates, and suppliers.
- Sharing information and benchmarking against other companies across industries to learn what works best.

We have pursued the usual lighting retrofits, building envelope improvements, and energy management tools that others are using to achieve gains.

The impressive part is how significantly we have changed our usage through these changes in a building that is only about seven years old.

The combination of multiple projects has reduced our electricity use by approximately 20 percent, water use by over 25 percent and natural gas usage by almost 40 percent.

With a mixed stream recycling program, our solid waste diversion rate has risen to 88 percent (by weight) in recent years.

Many projects – although not all – have paid for themselves in 12 to 24 months, and a number of our customers have begun to take notice of our efforts to be more sustainable.

One of our favorite projects was a retrofit to our HVAC software, which in combination with CO2 sensors and upgraded controls enabled us to significantly reduce the heating and cooling of makeup air

to our office space. That project alone was responsible for the significant reduction in natural gas usage – and has reduced the office cooling costs in the warmer months.

A more recent change that had an even faster payback due to utility rebates was a change to induction lights in our parking lots. We were able to drop our wattage to less than half of what it was originally, and anticipate many years of maintenance free outside lighting.

A number of our associates have caught the vision, and regularly come up with their own ideas for reducing resource use. One associate devised his own dock light using an LED bulb that fit within the existing fixture. We are implementing this at every dock door, to dramatically improve our lighting efficiency.

I once consulted for an airport authority whose Executive Director declared that he wanted his main airport to be “the greenest in America,” and was willing to spend whatever it took. He realized that when people visit a town the first thing they see (and first impression) and last thing they see is

Marc Karell

Climate Change & Environmental Services
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the airport. So a bright, energy-efficient, and modern airport will cause more people to take return trips which would benefit his airport.

The project got off to a good start. We were collecting initial data to determine a baseline GHG emissions and energy inventory. But then the recession hit, and the Executive Director had other “fires to put

out,” and this program became less important to him.

I then met with the Environmental Committee and a few people tried to squash the entire project; they identified themselves as climate change skeptics. Can you imagine: climate change skeptics on an environmental committee?! They came out of the woodwork once the Executive Director lost his enthusiasm.

The moral of the story is that you need leadership from the top, the very top, and consistent support to enable a sustainability program to succeed.

environmental management

As a sustainability expert at Good Business International, Inc., I wanted to understand how one of the oldest financial institutions in the U.S., the New York Stock Exchange, now a major global corporation, NYSE Euronext, took on the challenge of becoming carbon neutral. The challenges were

Monika Mitchell

Good Business International (Good-B)
www.good-b.com

steep, not the least of which were the retrofitting hurdles posed by the 100+ year old edifice at Broad and Wall Streets in New York’s historic financial district. I spoke with Jeffrey Pellet, Senior Vice President, Global Head of Real Estate and Corporate Services of NYSE Euronext on the challenges and accomplishment of

becoming the first global carbon neutral financial exchange group in 2011.

Pellet said the first step is to measure the company's global carbon footprint. Once accurately measured and understood, it can be managed. Next, he said, it was necessary to get "buy in" from the top. Pellet pointed out that companies are not being "forced" to become carbon neutral. Fortunately, CEO Duncan Niederauer is committed to sustainable practices and believes in "leading by example." Pellet explained that, in this case, NYSE Euronext believed becoming carbon neutral was the "right thing to do" and after carefully exploring the options available they decided it was a commitment they were willing to take on.

He pointed out that every company is unique in its opportunities and challenges for sustainability, whether that process allows for adapting to renewable energy sources or other means of reducing their carbon footprint. He recommends, "Enlisting the help of a sustainability consultant." NYSE Euronext works with Code Green in NYC, "to assist with the evaluation of options and the identification of independent third party certified RECs and Carbon Offsets." These options will vary in price on the open market and ultimately NYSE Euronext selected 3 Degrees as a partner to purchase the RECs and Carbon Offsets.

Among the other green initiatives was the rooftop installation of solar panels on the Exchange's main data center's in Basildon, England and Mahwah, New Jersey (currently under construction). These photovoltaic systems help to both reduce the company's carbon footprint and lower electricity expenses by generating as much as 20 percent of the data center's current demand for electricity. In the U.K. a long-term guaranteed government incentive program helped to offset the initial installation costs.

In New Jersey they chose to enter into a power purchase agreement (PPA) to mitigate direct exposure to the SREC (Solar Renewable Energy Credits) market. At the 11 Wall St headquarters, the challenges are uniquely difficult due to the age, location and restrictions of the landmark building itself. The four decade-old windows on the floor of the Exchange are being replaced with high efficiency insulated windows, produced by Serious Energy, to improve the appearance of the building's façade while significantly reducing heating and cooling energy expenses on the trading floor.

Through a sustainability committee exercise that involved evaluating our procurement documents, SNC-Lavalin O&M endeavored to find ways to green our existing operations.

Our committee investigated the impact that the use of dish soap (for window cleaning work)

has on the environment. Our findings were that one of the cleaning components that is integral to the product function (a surfactant) was chemical based in most of the products that our contractors were using. Through our research we uncovered that a vegetable-based surfactant was available as an alternative to the chemical based surfactant used in the most popular dish soap brand.

We were happy to learn that the soap comprised of the natural surfactant was an accessible and viable option. We then proceeded to alter our specifications in our tender package, and were equally as thrilled to find that our contractors received the change well and in 85 percent of the submissions the product change did not bare an economic burden; so the switch was cost neutral.

Our time devoted to research lead to a simple change of product by which the environment was protected and our confidence in our practices reinforced.

Amanda Gorman

SNC-Lavalin O&M

www.snclavalinom.com

Symbols are powerful motivators. A scapegoat usually symbolizes a group's blame and failure. But what if a goat could symbolize a group's value and success?

Stories speak to people in a way numbers don't. Companies telling good sustainability stories without good numbers aren't really practicing sustainability; companies making good sustainability numbers without good stories are unnoticed.

Christina Page

Yahoo! Inc.

greenumerations.wordpress.com

Here at Yahoo! we've been lucky enough to have both good stories and numbers in 2011.

For example, Yahoo! had an invasive weed problem on a plot of land next to our data center in Quincy, Washington. Rather than using pesticide or a gas-powered sit motor to eradicate the weeds, we hired a company called Healing Hooves to truck in 252

goats and a border collie. The goats stayed for two days, munching away on our weeds and giving birth to twins. A local cinematographer captured the visit and turned it into a cute two-minute video.

The project cost less money than either pesticides or mechanical mowing, and the data center engineers look forward to the goats' visit every spring and fall. What was intriguing about the project is the amount of attention the goats received both inside and outside the company.

After an initial flurry of press coverage, we won a Telly Award for the video (beating out a video of former Brat Pack movie star Molly Ringwald). The video has been shown repeatedly at Yahoo! all-hands meetings and has sparked a flurry of new ideas and hallway conversations among Yahoo! employees about additional green innovation.

Our sustainability team here has a lot of accomplishments to be proud of – LEED Gold certification of our main campus, LEED Silver for our Nebraska data center, a \$10 million green IT grant from the Department of Energy, and some of the greenest data centers in the world.

In terms of energy and water saved, each of these projects dwarfs the positive physical impact of our team of grazing four-legged creatures. But a very small project (aided by cute baby goat pictures) has captured public and employee imagination and has advanced the culture of green at our company in a significant and unexpected manner.

As stewards of the public trust, our pursuit of green initiatives is balanced against our commitment to sound, responsible governance. At a time when everyone is trying to do more with less, DuPage County has been progressive in implementing environmental programs in order to cut costs.

Jeff Redick

DuPage County, Illinois

www.dupageco.org

One key example of a successful program recently implemented is through the County's Division of Transportation eco-friendly management of 950 road miles. In 2008, DOT began using Geomelt, Super Mix 217 Geomelt K and Ecosalt to augment the effectiveness of salt used to maintain roads in the winter.

The salt stock is treated with the Geomelt, a sugar beet based organic accelerator. The Super Mix 217 is a liquid blended product used as a replacement for liquid calcium chloride. The Geomelt K is a non-chloride liquid used in the parking garages that eliminates concrete and metal corrosion, and Ecosalt is less corrosive than traditional salt.

The supplement of these new eco-friendly products helped DOT reduce the use of traditional salt by one-third, or by 8,100 tons of less salt. It also allowed the County to save \$503,316.

The reductions were also made while maintaining or improving public safety. The products also

have a positive impact on the environment as well since the County is no longer using as much salt.

For example, chlorides, mainly from winter de-icing compounds such as sodium chloride, or common salt, have a major impact on local rivers by limiting both fish and aquatic insect life.

In addition to the environmental impacts, winter salts corrode transportation infrastructure and vehicles.

One significant climate event of 2011 that resulted in an extensive effect on the technology industry was the Thai floods, which left one third of the country under water. As ECommerceTimes.com noted, the floods contributed to Intel's lowering of their Q4 2011 guidance due to computer hard-disk sourcing issues.

Marianna Grossman

Sustainable Silicon Valley

www.sustainablesv.org

For a company headquartered in Santa Clara, Calif., to be so strongly impacted by events several continents away is a true symptom of our globalized world.

The impact of billion-dollar climate events in a global economy is far-reaching and potentially devastating if enterprises and governing bodies do not

find ways to prepare for and recover from these catastrophes.

If a shut-down in hard disk production can impact the economy, imagine how communities could be impacted by an event depleting sources for food and fresh water.

This year, Sustainable Silicon Valley will explore how a change in approach in the areas below might better equip our communities and economies for our changing climate environment:

1.) Enterprise level change

a. Optimize sustainability of operations, supply chain, products, customers

2.) Regional – eco-industrial collaboration

a. Smart distributed infrastructure for energy, water, transportation and materials/waste

b. Collaboration within eco-industrial “neighborhoods”

3.) Take larger system costs and future costs into account

a. Monetize climate related risk (calculate cost of insuring against catastrophic weather-related disasters – there have been more than 12 \$1 billion weather events in US in 2011 <http://www.noaa.gov/extreme2011/index.html>) through climate change insurance or through a direct price on carbon (carbon tax or trading system)

b. Forecasting (what are implications of increasing levels of methane plumes in arctic region? How will changes in weather patterns affect industries such as cotton, winter sports and wine? How will conflicts over water, food and arable land affect markets and resource providers?)

4.) Adaptation (how to operate under increasingly severe weather patterns and disruptions to agriculture and water supplies)

As a membership organization for healthcare community facilities that have made a commitment to sustainable, environmentally preferable practices, we believe that every dollar saved on waste

Laura Wenger

Practice Greenhealth

www.practicegreenhealth.org

recycling and energy and water conservation is a dollar that improves patient health, staff safety, and the environment.

A Practice Greenhealth member hospital achieved the following:

- Saved approximately \$500,000 annually and diverted over 16,500 pounds of waste through single use device reprocessing.
- Saved over \$260,000 annually by using a reusable sharps container program. This represents avoided sharps container purchases and landfill fees.
- Saved \$20,000 annually from distilling 2000 gallons of xylene (\$17,700 reduced purchase costs and \$2,775 avoided disposal fees).
- Saved \$67,000 from conserving over 40 million gallons of water.

sustainability

If you talk to one expert, sustainability is all about facility design. Talk to others and you'll learn it's all about energy, product and service lifecycle assessments, waste reduction/reuse/recycling (3R's), greenhouse gases (GHG), green information technology, green procurement, marketing, public relations, and on and on and on. Whew!

William Borges

Eclipse Corporate Development
eclipsecorpdev.com and hospitalsustainability.
blogspot.com

Who is right? Collectively, all of them; individually, none of them. So, beware when listening to "experts." Technical specialists tend to view broad disciplines, such as sustainability, in terms of their own narrowly defined professional subsets. There is nothing wrong with that. In fact, we expect specialists to have that kind of laser-like focus.

However, when an organization first starts working on sustainability, it needs to take a S.W.O.T. (pun intended) at determining all – not just a few – of its strengths, weaknesses, opportunities and threats. It can't do that well if it distracts itself by prematurely focusing on only a few specialty aspects of the discipline. The risks are missed opportunities, ineffectual efforts and wasted resources ending in the frustration of program failure.

A long-term sustainability plan is helping to reverse the fortunes of the Huntsman Pigments plant in Calais, France, transforming it into one of the strongest and most sustainable sulfate titanium dioxide (TiO₂) plants in the world.

Roy Conn

Huntsman Corporation
www.huntsman.com/eng/Sustainability/
Sustainability/index.cfm?PageID=8806

In 2008, the Calais site had reached a crisis point. Despite significant efforts in cost reduction, financial results were dismal and the plant was a candidate for closure. A long-term sustainability plan was designed and Calais took the bold step to close the most problematic component of its site. Closure not only meant the end of a dangerous and difficult job for plant

operators, but also put a stop to ongoing and costly maintenance.

The result? Significant energy savings and an important simplification of the process that positively

influenced the site's carbon footprint. CO2 emissions have been reduced by 35,000 tpy. The Calais team extended its sustainability plans to encompass further improvements to the site by exploring options to manufacture fertilizers. The results have been outstanding and underscore the value of sustainability in improving people, planet and profits.

In 2010, the site reported its best financial performance in more than 15 years. As a result of the Calais initiative, other sustainability benefits also have been achieved. Site energy consumption has been reduced by a total savings of US \$5 million (€3.5m) per year – enough energy to heat and light 3,000 homes a year.

Over the last 20 years, we've learned a few things about setting effective environmental goals and we've found those best practices apply to our new sustainability goals as well.

Effective goals should...

1.) Be stretch but achievable. Lofty high level goals can be initially inspiring, but it's important to also have incremental goals to help a company establish a road map to reaching its objectives. Since 1990, 3M has been systematically working to reduce its emissions of volatile air emissions. Through a series of smaller stretch, but achievable, goals the company has reduced VOCs by more than 95 percent since 1990.

2.) Align with corporate/business strategy. – It is important that any sustainability goals be relevant to your business strategy. As an example, reducing VOCs, energy and waste are important to 3M's

strategy to reducing its manufacturing/raw material costs as well as to reducing 3M's environmental footprint. Likewise, 3M's goal to increase the sales of new products with environmental attributes is driving the development and sale of products that are focused on helping our customers achieve their environmental objectives.

3.) Have the right time horizon. Effective timelines are long enough to allow capital / R&D projects to be fully implemented but not so long that the company's attention can be diverted to other efforts. There needs to be just the right amount of time pressure to maintain focus. At 3M, we've found that 5 years is a good window for most of our goals.

4.) Not be established in a vacuum. Its essential to involve all of your internal stakeholders in the process of establishing the goals. This not only ensures buy in to your targets but makes sure that the relevant parties fully understand the goals and how they can integrate them into their activities.

Keith J. Miller

3M

http://solutions.3m.com/wps/portal/3M/en_US/3M-Sustainability/Global/VisionHistory/Goals_2015/

I have consulted for several companies in print and paper over the last few years, training and preparing them for sustainable development programs on the basis that their markets have taken those directions.

Derek Smith

Derek Smith & Associates LLC
www.paperleadership.com

In all cases but one, the companies have gone half way and will not finish the job.

Half way means management approaching sustainability with great enthusiasm and forming committees to implement the strategy, made public their intentions [mostly too soon] and then, as they fail

to persuade their sales people to move the strategy into the markets [through ignorance at both buyer and seller levels], given up the program.

Only one has recognized the need to develop internal sustainably based structures, external supplier sustainability based procurement criteria and external market research to place the program in the right hands, before taking the program public and staying the course.

This is not 'quick fix' business technology, it is changing the ways companies operate from start to finish and it takes time.

For 18 years, the rechargeable battery industry has operated Call2Recycle, partnering with retailers, communities, businesses and public agencies to divert 70 million pounds of batteries from landfills. Through our involvement with all aspects and relationships in the development of product stewardship initiatives, here is how the respective roles of industry and government need to evolve:

Carl E. Smith

Call2Recycle

www.call2recycle.org

Government cannot abdicate their leadership in waste management even when product stewardship policies are adopted because:

- It's the most credible voice – Consumers more often will listen to government as opposed to industry, where it may be perceived as "greenwashing."
- It knows its jurisdiction – Government is aware of the community and what works best based on its

demographic.

- It can influence local opinion – The clout of government can provide enough benefit to change behaviors and opinions.

Industry groups have unique knowledge so that they can:

- Understand how to minimize costs, optimize performance and maximize the environmental impact of transport and processing – The private sector excels at streamlining for economic effectiveness.
- Can create a seamless brand/program across multiple jurisdictions – Also, with more experience at marketing to consumers, industry can effectively develop messaging.
- Can respond to evolving end-of-life challenges – As the manufacturer of the product, industry recognizes and responds best to how to properly account for potential difficulties in the proper end-of-life for their product.

Wendi Latko

Xerox

www.xerox.com

At Xerox, we continue to believe that for sustainability to be meaningful, it must be incorporated into an organization's business operations. Sustainability initiatives separate and apart from your fundamental business operations are meaningless.



*It's not easy
being green...*

or is it?

It's time to change conventional wisdom. Innovative technologies, new approaches and increasingly competitive markets are redefining energy choices for businesses and homes across America.

Constellation is in the forefront of a new era with customer-focused flexibility, a growing array of sustainable, efficient energy options, and inspired, forward-thinking enterprise. The result: Tailored energy strategies that meet not only today's needs, but tomorrow's challenges.



Constellation Energy

constellation.com

From an ICT perspective, we can anticipate an increase in ICT Sustainability maturity from 2011, in comparison to the decline we saw globally in 2011, as I reported in the ICT Sustainability: The Global Benchmark report.

Alison Rowe

Fujitsu Limited
www.fujitsu.com

Through an increased focus on real-time measurement of energy driving much needed change to fiscal management practices. ICT Sustainability projects will increase their position on the priority list based on a more compelling ROI.

The action still remains with organizations to provide greater transparency and accountability to the ICT department for energy. Globally 14.2 percent of CIO's surveyed in the report had budgeted for energy, in Australia it was less than 1 percent in 2011. ICT has a leadership role in making sure this is built into systems and the way we capture and report data.

Keith Burgess

IBM
www.ibm.com

2011 may well be remembered as the year environmental responsibility was discarded in favor of tighter fiscal responsibility. However, the most successful environmental initiatives are those that provide profitable results in tandem with environmental improvements. And we must never lose sight of that.

My greatest learning and insight this past year is the overwhelming degree to which macro and micro economic issues dominate sustainable development.

From issues as global and far reaching as pricing carbon, to those as narrow as budget available for recycled office paper, and to most everything in between. It has been and continues to be a very challenging environment for moving the needle in meaningful ways, and in my view it primarily comes down to economics.

Jeff Wilson

Quiksilver, Inc.
www.quiksilver.com

However, as with most obstacles, once you begin to research it more deeply with people in the trenches, cast assumptions aside, dig into the details, you are able to unearth some windows of opportunity that can lead you to a strategy to overcome at least some of the hurdles. Something to get you started on the path to improvement, moving up the learning curve,

challenging and changing the economic status quo. Otherwise you're simply doomed to throwing up your hands and getting nowhere.

This is particularly true with product-based businesses with established and complex organizational structures, brands and geographies interacting with established and complex product manufacturing supply chains. It is incredibly murky, mysterious and misunderstood.

However, when you start talking to people who design, cost, source and produce product and challenge prevailing assumptions, the windows of opportunity start to open and pragmatic solutions begin to appear. We are working to seize upon several of these windows of opportunity in our organization structures, our brands, and our global geographies that we believe can meaningfully impact a major economic component of our core product mix. This will enable us to design, produce

and deliver continued improvement in both the content and volume of sustainable product in the years ahead.

And together with the many like-minded businesses in our industry, we can revolutionize and transform the fundamentals of our supply chains, without risking our economic and financial well being.

Researchers tend to study failures, but understanding what not to do is only part of the information. We need to know how to successfully carry off sustainability efforts.

Sandra Price

University of Missouri – Kansas City
www.umkc.edu

In my research, I've had the good fortune to look at companies who are "doing it." I've discovered that the successful ones have figured out a way to embed sustainability as "another criteria" at critical decision-points.

How embedding occurs depends entirely on the operation itself. For some companies, this may mean grounding all employees thoroughly in sustainability values and technologies, even hiring only those individuals who show a predisposition – or at least no disinclination – to a sustainable perspective.

For other companies, it might be much simpler. It may be embedded in a centralized purchasing process as another weighted criteria, along with cost, maintenance requirements, product lifespan, vendor service availability, etc.

No matter how a company manages its embedding process, however, one thing is consistent from firm to firm: a no-excuses sustainability mandate directly from the top.

2012 is shaping up to be a pivotal year for EPA and major industries such as utilities, refineries, oil and gas production, and manufacturing, and not just because it will be a presidential election year.

Larry Goldenshersh

Enviance
www.enviance.com

While the Keystone Pipeline project has gotten most of the publicity as the high profile environmental issue of the day, EPA is engaged in a series of actions in 2012 that will shape air quality and Greenhouse Gas (GHG) regulations for the foreseeable future. These actions include Utility MACT, Cross State Air Pollution Rule (CSAPR), PSD permitting for GHG (Tailoring Rule), NSPS for GHG, Boilers and Incineration MACT Rules, and

NSPS and MACT for the Oil & Gas Sector. Here is a quick look at the status of these important matters:

The Utility MACT (now called the Mercury and Air Toxics Standards or MATS) was signed as a final rule on December 21, 2011. Numerous states had requested EPA delay issuance. Industry and some states are likely to appeal. EPA estimates that 4.7 gigawatts of power generation will be retired as part of the overall response to the rule.

EPA issued the CSAPR in final form in July 2011 but the US District Court in Washington DC issued a stay of the rule's implementation on December 30, 2011. If not overturned upon review on the merits, it would result in significant reductions in SO₂ and NO_x from power plants in the eastern US.

EPA and most states have begun issuing PSD permits that defined BACT for GHG emissions under the Tailoring Rule, now in its second phase. Appeals have been filed by industry and states and a hearing date has been set for February 28, 2011.

EPA is committed by consent decree to propose NSPS for GHG for Electric Generating Units (EGUs) and refineries. The first proposal, addressing EGUs, is expected in early 2012.

The Boilers and Incinerators MACT Rules were issued in final form on March 21, 2011 and the Federal District Court in Washington DC has overturned EPA's attempt to delay implementation in a ruling dated January 9, 2012. The rule will impose emissions limits on approximately 1,750 boilers at major sources and recordkeeping requirements on 12,000 more.

EPA proposed NSPS and MACT for the Oil and Gas Industry in July 2011 addressing emissions of VOC, SO₂, and air toxics. Final rules are expected in spring 2012, with appeals likely.

No matter what the final outcomes are in the individual rules and court challenges, one message stands clear: EPA is attempting to walk an emissions reduction tightrope. It is seeking to ratchet down emissions across the board, while stressing the number of units that are adversely affected is relatively small. This message is repeatedly given in the fact sheets which EPA issues in conjunction with its actions. Phrases such as "...86 percent of boilers are not affected by this rule..." and "... less than 0.5 percent of generating capacity will be taken offline..." are common in its descriptions of its actions.

A major part of EPA's strategy is to compel industry to keep records of process and operating data, maintenance actions, and incidents that may result in higher emissions. EPA knows that all of these recordkeeping and reporting requirements will be federally enforceable standards under Title V permits, and therefore will require annual compliance certification by responsible company officials. Title V provides an enforcement mechanism that magnifies the significance of all of the recordkeeping and reporting requirements contained in these evolving rules. The certification by the responsible official carries with it a personal obligation to ensure that systems are in place to verify and report on compliance status. The trend towards using Title V as a hammer in the EPA emissions reduction toolbox will continue. EPA estimates that 14,000 major sources will have new recordkeeping and reporting requirements under the Boiler and Incineration rules alone.

The added complexity and number of obligations for which certification is required increases the need for systems to manage the compliance data and reporting process. Fortunately, tools to address this compliance data management challenge are becoming more readily available and more completely understood by industry officials.

Glen Garrick

Vancouver Coastal Health
www.vch.ca

To work in sustainability is to work in fluid complexity. You don't have to know or understand all the solutions. But you have to lead by example and with optimistic passion. You have to be the lead protagonist of current sustainability discourse and decision making. And you have to know when to be the key antagonist in a larger bureaucratic system.

facilities

Blue Shield of California reduced its carbon footprint by a substantial 8 percent in 2010 over 2009, thanks largely to energy efficiency upgrades and green building renovations.

2009 was the first full year of operation for Blue Shield's LEED-certified, brand-new campus in Lodi – replacing four less efficient leased buildings.

Nancy Shaw

Blue Shield of California
[www.blueshieldca.com/
socialresponsibility](http://www.blueshieldca.com/socialresponsibility)

Other initiatives included installing energy-efficient lighting upgrades using lower wattage bulbs, recommissioning building control systems at Blue Shield's campus in El Dorado Hills and also purchasing EPEAT- and Energy Star-certified computing equipment for use statewide.

2011 saw significant steps forward in smart building technology, including portfolio-wide systems, integration of centralized and on-site facility staff, and to tie it all together, cloud-based computing.

Systems designed for managing large portfolios of owner-occupied properties may use cloud

Dan Probst

Jones Lang LaSalle
www.joneslanglasalleblog.com/greenblog/

computing to analyze thousands of data points around the world in real-time, looking for trends and anomalies that may identify problems even before they occur.

The system alerts command center staff when a potential problem is detected at a property anywhere in the world.

If the system can diagnose and correct the problem remotely, there is no need to alert the on-site staff immediately. When the system identifies an anomaly and can diagnose the most likely cause, on-site repair people can show up prepared with the right tools and replacement parts, often saving a second trip.

Another innovation that enables new-generation systems to work in more situations is the development of cross-compatible technology. In the past, leading energy services providers were primarily makers of controls and other equipment, and one firm's systems could not "talk" to other systems.

Recently, independent companies have created systems that can translate information from different legacy systems into a common language. Thus, a company with dozens of buildings equipped with controls from numerous makers can now integrate data from all buildings into one seamless interface. As a result, facility experts can remotely monitor systems across a worldwide portfolio, benchmark performance at similar properties across the portfolio to help guide capital planning, and determine when a maintenance or repair issue requires an immediate visit from facility managers who may be on-site or nearby.

Cost savings and carbon reduction opportunities are greatly increased and results are more easily measured under these portfolio wide systems.

Despite these recent innovations, smart systems are still in their infancy. The real benefit comes when smart buildings, transportation modes and electrical grids are tied together using

cloud technology in the intelligent cities of tomorrow. We can start to see where this convergence of technologies is taking us, and there are likely to be even more life-changing innovations that we can barely imagine today.

When Conservation Services Group (CSG), needed to expand its Massachusetts HQ, several factors played into the decision. But what ultimately led us to our new facility was driven by the landlord's flexibility and willingness to improve the building by making it more sustainable.

Jacqueline Swanson

Conservation Services Group
www.csgrp.com

When we approached commercial property landlords in Massachusetts about making their facilities more energy efficient, one firm, Carruth Capital, was particularly open to the concept.

The laundry list of improvements CSG suggested included a PV array on a white roof; a single stream recycling system; interior upgrades with recycled carpeting and low-VOC paint; six new, rooftop energy efficient HVAC systems and an electric car charging station.

Instead of telling us it was too expensive, or that the building was too old to make changes, Carruth listened to our proposal and carried out an extensive retrofit.

One hundred percent of our requests were accommodated by our landlord. Because of this, the building is scheduled to achieve LEED certification this spring.

So the lesson here is, "Ask!" It doesn't hurt.

Following a successful test program in 11 of our Maine stores, that specifically included ratcheting up recycling, we are now poised to lower the amount of waste we produce company-wide in 2012.

The test began last August and ended in late December. It was conducted in 11 Maine stores (one district). Our goal was to build the business case for a program that could be carried out across Hannaford stores to maximize recycling income, reduce waste costs and lessen our impact on the environment.

Kasey Harris

Hannaford Supermarkets
www.hannaford.com

The test stemmed from work in the first half of 2010 when 2 stores went through the LEED for Existing Building and Operations (EBOM) certification process.

During this process, the sustainability team put a major focus around recycling and reducing waste.

Over the next 6 months the 2 stores cut their waste by 60 percent. After seeing these results, the Hannaford sustainability team anticipated major savings and wanted to determine if we could replicate these results on a larger scale. So, the test for the 11 stores mirrored the enhanced recycling practices we used for LEED EBOM certification.

We also benefited from third-party initiatives to kick our test into gear: the Maine Department of Environmental Protection's Environmental Leader program for supermarkets; and a project from the Association of Postconsumer Plastic Recyclers to increase the reuse of rigid plastics. With the multiple certifications, and Hannaford's Sustainability goal of moving toward zero waste, we were set up for success.

Time, energy, and focus brought this work life. They 3 key components to execute successfully were:

- 1.) Associate education and engagement (in supporting Sustainability communication and programs)
- 2.) Execution of ALL waste and recycling programs to an optimal degree (complete with store level tracking of recycled materials)
- 3.) Identify and execute food waste diversion programs for each store location (food donations, feeding livestock, or composting)

As a result, waste volume was reduced 35 percent, cardboard recycling went up 6 percent, stretch and film plastic recycling went up 9 percent, and rigid plastics recycling went up 320 percent.

We achieved an average diversion rate of 81 percent – well above the Hannaford store average of 61 percent.

All pilot stores are now on track for designation as an Environmental Leader with the Maine DEP program. Up next is the potential to roll out a waste-reduction program to the entire Hannaford chain of 179 stores.

The Supportive Housing Network of New York is a statewide housing organization that was a community partner in the 2010-2011 American Recovery and Reinvestment Act funded Weatherization Assistance Program for multifamily buildings.

Ariel Krasnow

Supportive Housing Network of New York
www.shnny.org

Initially, our focus was to enroll 2,600 units of housing for publicly funded energy retrofits and we achieved our enrollment goals.

However, while capital improvements are critical to improving energy efficiency, it is only part of the long-term story. An integrated building approach including operations, maintenance and resident behavior, would be vital to sustaining consistently reduced levels of fuel and water use.

The weatherization contract required one facility staff to attend energy efficiency training, but we encouraged multiple building staff to attend and to regularly maintain a facility-training schedule.

To address resident habits we developed a conservation education pilot program for building tenants. We were concerned that a standard informational education approach would not have the long-standing impact we wanted, so we utilized a “Community Based Social Marketing” approach to understand the population, facility staff and building systems, and then used this information to prepare unique programs for three building (about 120 tenants).

The building specific programs were comprised of four consecutive workshops in the summer of 2011 and follow up sessions are in progress now.

The programs were well received by both staff and residents, and we are learning that many tenants have maintained the particular behavior patterns that were addressed in their groups.

However, while capital improvements are critical to improving energy efficiency, it is only part of the long-term story. An integrated building approach including operations, maintenance and resident behavior, would be vital to sustaining consistently reduced levels of fuel and water use.

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Frank Deluca

DCL Equity Partners Inc.
www.dclequitypartners.com

If your sustainability initiative has a payback beyond eight years, you’re likely paying for someone else’s education or your own.

And even at eight years or even ten, do we really plan on demolishing the building thereafter?

I’m currently planning to build the greenest most sustainable healthcare office building in Canada, possibly in North America, and I’m not going LEED. I have opted to be the first BREEAM certified building in North America.

Starting in 1994, **Murphy Warehouse Company** has installed native prairies on their logistics campuses and has saved over \$829,000 at two of the facilities! Cut lawn costs 7.3 times more than native prairie to maintain. At one of our campuses it costs \$4240/year to maintain 6 acres of prairie

Richard Murphy Jr

Murphy Warehouse Company

www.murphywarehouse.com

vs. \$21,650/year to maintain 4.2 acres of cut lawn. Installation ROI runs 1.28 years. Our 14 acres of prairie carbon sequestration is 24.93 MtCO₂e/year while our 732 trees render 117.1 MtCO₂e/year giving us 4.8M pounds over 14 years.

In 2007, our 22-acre logistics campus in Minneapolis was hit with a new annual stormwater fee of \$68,000. This fee has risen 21 percent since

we started our mitigation plan which was built in 2009 resulting in eliminating 100 percent of the fee forever.

The project cost was \$680,000 to convert an older, 95 percent impervious campus to a modern stormwater site with an ROI of seven years.

Solar Power Solar normally has an ROI of 20-25 years making it not economical. However, given the right mix of grants we installed 200MWs across five facilities costing \$1.6M. Murphy, however, only paid \$160,000, netted an ROI of four years, and two of the sites produce more than 50 percent of power used. We selected tenKsolar panels which are made in Bloomington, Minn.

Cities in the foreseeable future will view trees as city infrastructure for stormwater and urban heat island management, and property tax enhancements. So the trees on your city boulevards adjoining your properties, and possibly even your own trees, will become important assets to you and will need proper management and maintenance as any other fixed asset. Consider that one mature deciduous tree holds 80 percent of a 1-inch rain in 24 hrs. (or 1/30th acre ft.). A 1.03-inch rain represents 90 percent of Minneapolis storms. This is a huge stormwater management impact!

Our new 310,000-square foot corporate headquarters, located in Richmond, Va., was constructed with 10 percent recycled materials, including glass and rubber, low VOC products in our paints, furniture and carpeting, as well as energy efficient products and systems. The building offers a 21 percent improvement in overall energy efficiency and usage over traditional construction methods.

We use energy-efficient heating and air systems with solar-reflective glass windows that maintain building temperature, while maximizing the amount of natural light through a 55 percent window-to-wall ratio. We use lighting technology that adjusts to take advantage of natural light.

Theresa Schnabel

MWV

www.meadwestvaco.com

Our green efforts in Richmond go beyond the physical building; however:

- We paved our driveway with Evotherm, the MWV-developed product that reduces emissions from road paving by 50 percent.

- We've rewarded over 70 drivers of fuel-efficient cars with preferred parking spaces, and offer cyclists parking designated just for bicycles.

- In our cafeteria, we use cups and take-out café boxes that are commercially compostable, including our own compostable MWare Balance PLA paperboard.

- In just one year, MWV's food service operation has sent more than 12 tons of organic waste to a local commercial composter. This has helped inspire us to launch GreenToGo, an educational website that helps other foodservice operators enact sustainable initiatives.

Even the biggest environmental skeptic can see the economic benefits of designing and building a new facility that uses half the energy of a similar structure or uses 90 percent less water than its predecessor facility.

Elizabeth J Heider

Skanska AB

www.usa.skanska.com

That's money in their pockets, slashed right from overhead operating costs.

Despite political debate about climate change research, the U.S. private market has come to a conclusion about green: it's good for business and good for long-term sustainability.

It's the job of builders and designers to champion the economic aspects of green. We must get to know every client's business needs and advise them on building strategies that will deliver results. If population projections are correct, in 50 years we'll have two billion more people and the same finite pool of resources – and that is a best case scenario.

Imagine the costs of utilities when you apply the supply-and-demand equation. Business owners that have an interest in being successful for generations need our input more than ever on how to get there.

The U.S. Green Building Council or USGBC Volume Program is designed for organizations planning to LEED or Leadership in Energy and Environmental Design-certify a large number of design and construction projects or existing buildings.

Jefferson Thomas

Marriott, International, Inc.

www.marriott.com/environment

Owners who followed the Volume Program for Marriott International's Courtyard brand saved about \$100,000 in upfront costs and six months of design time.

By saving 25 percent in energy and water consumption, hotels such as the Courtyard Pittsburgh

Settlers Ridge should recover their additional investment in five to six years – possibly sooner depending on federal and local government incentives.

We've known for years that monitoring a building's energy use could help us develop operational strategies that conserve energy and save money, but it always seemed that something was missing from that equation – people.

Sheri Rosenthal

McKinstry

www.mckinstry.com

Buildings don't exist in a vacuum. They are operated by and occupied by people. So at McKinstry we've expanded our approach to include educating building occupants about the importance of energy efficiency and environmental impacts and actions they can take to make a difference.

Centennial School District in Minnesota, which participated in McKinstry's powerED program, has saved more than \$115,000 in energy costs and more than 1,000 tons of carbon in one year. The district enlisted the participation of every student, teacher and administrator to change their behavior.

The program's behavior change campaign, People. Power. Planet, provides resources to help teachers and students take actions to save energy and better the planet. To date, 3,687 people have pledged to do their part.

There's a massive movement underway in New York City to transform business spaces into high-performance buildings. In just over a year, Con Edison's Commercial & Industrial Energy Efficiency

David Pospisil

Con Edison Commercial & Industrial Energy Efficiency Program
www.conEd.com/energysavings

Program has recruited 600 contractor, manufacturing, distribution and consultant partners to complete energy retrofits, renovations and sustainable building projects in NYC and Westchester County.

Con Edison, its market partners and its customers have already saved millions of dollars in energy costs, 140,000 MWH in electricity and 112,000 DTH in natural gas.

We have received over 1,700 project applications with another 350 in the pipeline, showing a serious commitment to energy efficiency.

The timing and the market in New York City is ripe with opportunity. It truly is a perfect storm of technology, expertise, innovation and capital coming together to motivate energy-savvy businesses that want to make their own contribution to a more sustainable world.

DASNY is a very large design and construction authority, handling approximately 7 billion dollars of work in New York State each year. We are also the second largest public finance authority in the nation, coming in just after the State of California. One of the first changes we needed to make

Jodi Smits Anderson

Dormitory Authority State of New York
www.dasny.org

in greening all we do for NYS was to set a broad goal to improve the construction work we touch, but we wanted to do this in a way that would truly improve the work without "flaring" the costs from design consultants and contractors.

We also wanted to affect everything from small toilet room renovations and chiller swap-out work to large \$500 million research facilities. Our policy was put in place starting January 1, 2008, for all projects, no matter the size, cost or complexity. We set specific sustainable goals for each project that does not "fit" a current LEED rating system (such as small renovations, or projects that address only one building system) and work to make sure those goals are communicated at all job planning, design and construction meetings.

These smaller projects are the bulk of our ongoing work for the State University of New York, the City University of New York, hospitals and healthcare, and other projects for the public good. Any projects that do "fit" the LEED framework are immediately registered by DASNY in a suitable LEED rating system. DASNY has set aside the funds for this registration, feeling that once the project is registered, the goal is clear and therefore more readily achieved.

In addition, we are careful not to call directly for a LEED Silver rating in our policy. As LEED is a third party review by GBCI, we cannot put the responsibility of achievement of that "award" onto the contractual obligation of the design team or contractors. Instead we require several key elements that would inform the greening of any project. By requiring these specific tasks and systems that benefit the building, we put the focus where it should be; on the process, not on the checklist. These key elements are:

- 1.) Register for LEED at the start of the project.
- 2.) Require Energy Modeling in the schematic phase as well as the construction document phase. Schematic phase modeling shall inform design through use of "design runs" in order to explore building performance and energy use.

3.) Require that a Commissioning Authority be part of the design process at the schematic design phase.

4.) Track, measure, and prepare all LEED documentation. This shall be included in the design and construction process, regardless of the nature of the project.

This approach attains for us smarter, better designed projects using the LEED system while it protects the consultants, contractors and New York State from undue contractual burdens.

We go on, in our policy, to state the following: The intent of this policy is to ensure the design and construction teams establish clear sustainable goals for the project, work toward those goals, produce the documentation confirming the goals have been achieved, and that the project remains within the established budget and programmatic parameters that make up the project description. To-date we have registered 36 projects and received certification for 5.

By far, the single most important message to get across to a customer is to make the connection between how the energy they are wasting in their building is affecting the competitiveness of their business. That's true for all buildings and businesses.

For an owner-occupied building, every dollar of wasted energy could be a dollar of additional profit. And for a business that operates at a 10 percent net profit, it means they have to sell \$10 of additional product to make up for that dollar of wasted energy. For an investor owned building, every dollar of wasted energy means their building is less competitive with other buildings out there and has to be reflected in their lease rates, and that impacts NOI, which impacts the value of the building by 10 to 12 times as much.

Gary Conti

The Green Technology Group Services

www.GTGservices.us

The economics of sustainability is not widely understood, but it's going to be massive in 2012, particularly due to financial challenges we face, which will transform the efficiency of companies and supply chains, affecting profitability and cost.

Some of the most visionary companies and organizations in the world such as DOD, GSA, P&G, Fujitsu, Microsoft, Apple, are already beginning to insist suppliers provide scorecards not just on dollars and cents, but also energy use, carbon emissions, and even water and waste – and crucially – they use this data to drive economic efficiency. We believe supply chain scorecards will be the biggest growth area for the next few years, with millions of companies being affected.

Environmental stewardship follows as a natural consequence, and everybody wins. Customers want to buy from eco-friendly companies, so gain a competitive advantage by displaying a Green LEED Certification or just LEAD in energy savings. Businesses that earn green certifications also save on energy and material costs. What does constructing a Green and Sustainable business do for you besides lowering energy bills, saving money, and making your building preferred to work in because it has better indoor environmental quality? The other major benefit is a marketing one.

supply chain

The publically released sustainability goal for Nike Equipment product was to meet Bronze Level ranking by the year 2020. It was the reality of this distant goal and discussions with our supply chain partners that led us to embrace sustainability for our Global Bags business two years ago.

Within two years, about 30 percent of our product is now sourced from a more sustainable supply chain. The insights from this journey fall into three areas of opportunity that brands should consider on their own journey.

Linda Keppinger

Nike, Inc.

www.nikebiz.com

First of all, it is imperative to develop a sustainability strategy for your business. The three-part strategy must include people, planet and profit. Meaning that each of these critical aspects must be incorporated into the overall plan. Working with a consistent and long-term commitment, sustainability must be achieved in collaboration with profitability.

Secondly, a way to measure progress or “Index” must be utilized. The scope of an Index comprehensively measures the impact on the supply chain for your specific business sector and/or function. Establishing business processes to measure the progress on a regular basis ensures that the scoring and metrics are communicated.

Lastly, it is the power of the team that will bring the vision to reality. Take the time to educate, inspire and consistently communicate with your team members. Approach and engage on all levels within the team. This multi-tiered approach will engage and implement change. Sustainability is a game changer for your business.

We implemented supply chain technology with transportation analysis capabilities that enables Inmar to determine the most efficient distribution of products in the forward and reverse supply chains by utilizing the appropriate facilities within our network or a client's current network.

Jeff Pepperworth

Inmar

www.inmar.com

The results have been compelling within a relatively short timeframe. For example, by implementing better transportation sourcing and networking for distribution, Inmar determined that a large mid-west grocer could save 10 million miles per year. Through returns network optimization, another

client has the potential to save 3.7 million miles per year. And, the technology shows that another could save approximately 200,000 miles per year by implementing an improved returns network.

An efficient Green Purchasing Transformation starts with the key question to the Corporate Chief Procurement Officers: What's the business case for change?

The first step after addressing the business case for change is ensuring both the Sustainability and Purchasing Teams are onboard. Once both parties are aligned the initial step for the CPO team is to analyze and select supplier's based on market complexity.

John Wilkerson, CPSM

Bellwether Services

www.bellwether-services.com

An established purchasing best practice is to start trial programs with low complex suppliers. Low complex suppliers from a Green Purchasing perspective are characterized by excess market capacity, standard product or service standards and possible solutions.

Personal computer replacement parts such as replacement mice or keyboards are great starting points for a new Green Purchasing Transformation Deployment.

A logical second step in a Green Purchasing Deployment process is segmenting the current supply base. During the second step, most CPO organizations will segment its supply base in into four categories: tactical, leverage, critical and strategic.

Obviously, suppliers who operate in the tactical and leverage spend categories are prime for any new trial programs such as reducing corporate greenhouse gas emissions.

Most manufacturing maintenance, repair and operating (MRO) services fit in the tactical or leveraged spend categories. Relative low dollar MRO services such as facility maintenance suppliers are excellent fits to include in the Green Purchasing Transformation Deployment.

The third step or Green Purchasing Management Technique that is rarely engaged is the common Spend Analysis. Spend Analysis is a simple Supply Management (SM) process which lists each supplier in relation to the dollars spent and value provided for each Stockkeeping Unit (SKU).

The Green Purchasing Analyst will group commodities or services and plot them in a four quadrant matrix. Suppliers in the bottom left, low costs and low complexity are excellent candidates for a low risk Green Purchasing Transformation.

By understanding the CPO's best practices as well as choosing proven green supply chain techniques, sustainability executives can reduce corporate GHG emissions thru increased Supplier Collaboration.

Consider this scenario; a mid-sized manufacturing firm with \$500M in North American Revenue may have 2,500 suppliers. It is likely there are at least 250 tactical, low complexity and low costs suppliers eager to join their customer's Green Purchasing Transformation.

2011 was a pivotal year for lifecycle assessment (LCA). The whole industry is moving towards a business approach – matching what my team and I have been advocating for a number of years. The business benefits of LCA are being documented and discussed and “environmental sustainability” is growing into a synonym for cost and waste reduction (aka profit-making activities).

Sara Pax

Carbonostics by Bluehorse
www.carbonostics.com

Creating supply chain efficiencies is an increasing motivational factor for LCA and this is a major step towards true sustainable business strategy.

In addition, companies are starting to demand faster, more affordable, and more transparent measurement tools and data, allowing for a distinction

between LCA for academic or government studies and LCA for business.

Pressures to measure and report all along the supply chain are increasing. There’s no question that reporting is on its way to being mandated and even while the international standards debate rages on, industry is not standing still. Companies who’ve taken the first steps towards measurement are seeing a clearer path to sustainability and reaping the benefits along the way.

Profitability is the driving force and understanding the impacts along the entire lifecycle and supply chain is key. 2012 is likely to be the year that LCA goes mainstream. Growing sources of credible data, accurate and peer-reviewed tools, and proof of the ROI of LCA will be commonplace.

Pilot and trials like the French and EU labeling projects will be completed and published. International standards will still be debated, but industry will find cohesion with the GHG Protocol and the ISO standards. Arguments against measurement and labeling will be superseded by the ROI realized with intelligent measurement work. The North American market will start to catch up with Europe and more will be heard from Asia and Australia on their work in the area. Food prices will continue to rise, increasing pressure on companies to better understand their supply chains and measure and control their costs, waste, and emissions.

Affordable and transparent LCA will be the method of choice to improve efficiencies, lower costs, and strengthen supplier relationships.

Our goal was to improve efficiencies in the supply chain of a valued retail customer. The exercise was more than just lowering cost. We also wanted to take a closer look at supply chain related environmental issues and ways in which they could reduce their carbon footprint as related to international shipping.

Derek Eisel

Expeditors
www.expeditors.com

The challenge was to identify opportunities that would address both cost and environment impact. In reviewing several aspects of the customer’s supply chain, the account manager noticed that from some origins the customer was shipping a relatively high

percentage of cargo as vendor loaded 20’ and underutilized 40’ ocean containers, as well as a relatively high percentage of LCL freight.

In part, this was a result of the fact that the customer had three distribution center destinations that orders were being shipped to; there would often be relatively smaller quantities of the same order type shipping to each of the three destinations from a single vendor. If an enhanced consolidation program could be implemented at origin, there would be the opportunity to reduce cost by consolidating these shipments together in larger sized containers. This could also result in a reduced

carbon footprint for the customer as fewer containers would be moving through their supply chain to ship the same volume of cargo.

After further analyzing a significant amount of the customer's historical order and shipment data several important program elements were confirmed. First, in terms of shipping, origins Hong Kong and Yantian were determined to be the areas of highest opportunity. These were the customer's two largest origins in terms of volume and also had consistent volumes of LCL, 20' and underutilized 40' vendor loaded containers shipping. Second, after comparing the potential impact of an enhanced consolidation program from each of these ports individually, the possibility of pooling consolidated cargo in one port was assessed. Based on the proximity of the two ports and the fact that most cargo shipping from Hong Kong was being produced in Southern China, it was determined that the potential financial and environmental benefits would be maximized if the consolidation program was pooled and located in Yantian. Third, the implementation of this program would require the conversion of what would normally be vendor loaded containers (20' containers and 40' containers that, based on to be agreed upon business rules, were considered as underutilized) to cargo delivered on a CFS basis for consolidation. In comparison with container terminal charges, on a per cubic meter basis CFS charges are considerably higher.

Based on the customer's terms of sale the vendor would normally be responsible for these charges, however there was certain to be resistance from the vendor on this, especially given that the benefits of the program would go to the end customer. As a result, we proposed something that had worked with other customers implementing similar programs. The customer would pay for the CFS charges, while the vendor paid a fixed per cubic meter pro-rated amount of what a vendor loaded container terminal charges would have been. This would keep the vendor's cost largely neutral, while the customer would bear the CFS charges, which would be offset by the resulting savings in ocean transportation costs. A subsequent revision of the original analysis confirmed that even with the customer paying the origin CFS costs that there would be significant net savings as a result of reduced transportation costs.

The account manager then worked jointly with the customer to develop and implement the business rules for the enhanced consolidation program. This was done in conjunction with our offices in Hong Kong and Yantian. These offices recently introduced the program as part of a vendor conference being held just prior to implementation, also enabling a smoother start-up of the program. In each of the first several months of the program the account manager compared and analyzed how the customer's orders were shipped under the new program's business rules versus how shipments would have taken place before the program went into effect.

As a result of enhanced consolidation, the percentage of the customer's cubic meter volume that would have shipped as LCL cargo was decreased from 6 percent to 1 percent of the total. In addition, in comparing how many containers would have shipped before the new program was implemented versus how many actually shipped under the program for the same group of orders there was a 49 percent decrease. This means that one out of every two containers that would have shipped before was eliminated.

From a cost perspective, the elimination of 20' and 40' underutilized vendor loaded containers, combined with the reduction in LCL cargo, reduced international transportation costs by 41 percent. Factoring in what the customer paid for origin CFS costs to enable the program to be implemented, net savings were 20 percent. The program has successfully achieved the customers two objectives given to the account manager in the beginning: cost reduction, as well as decreasing their carbon footprint through container and LCL cargo elimination from their supply chain.

Sustainability professionals are often focused on supply chain improvements because environmental impacts accumulate as products change hands and move up the chain. It's rare that a single company has a greater impact than its supply chain.

Arlin Wasserman

Changing Tastes
changingtastes.net

It's important to remember that social impacts also accumulate and some of the older supply chain practices that hinder environmental efforts, like lack of transparency, also affect social issues.

For Sodexo, a leading global food service contractor where I served as vice president of sustainability from 2007 to 2011, we both had our reputation put at risk because we didn't have a system for knowing which farms sat at the other end of our food supply chain and then faced another challenge around transparency of vendor payments.

As sustainability moves from eco efficiency and environment to a broader social agenda, opportunity and risk still lie in the supply chain.

Anonymous

NHS Supply Chain
www.supplychain.nhs.uk/sustainability

We have found that our certification to ISO 14001 has benefited use greatly in the modern environmentally-conscious world.

Not only does it allow us to track and monitor usage of key indicators such as electricity, gas, water, waste and recycling – but puts us in good stead to tackle carbon emissions through the same reporting structure.

The system embeds environmental thinking into the core operations of our business right from the bottom to the top, making it key to most business decisions.

This solidarity removes the “soft and fluffy” aspect that sometimes gets linked with the environmental agenda – we are not all tree-huggers.

workplace

Employee engagement continues to be a key area of focus and growth within our strategic initiatives. In fact, creativity, innovation and ultimately deeper engagement are growing thanks to a

few key success factors elements that we continue to advance and improve with our Global Eco Teams here at Sabre:

Leilani Latimer

Sabre Holdings

www.sabre-holdings.com

- Providing a specific charter for alignment with the company's overarching sustainability goals increases engagement and sense of purpose. This "line of sight" guidance helps teams drive their work to the core of the enterprise.

- Structured guidance and governance provided by a centralized sustainability leader ensures greater team alignment with the company's goals and provides a conduit for capturing the Eco teams' ideas back into the corporation.

- Results jazz people!! Measurements, indicators, systems and tools are necessary to quantify outcomes, capture ideas and report on progress.

- Buy-in at the highest levels of the organization means that Eco Teams are aligned with the company's goals and that the companies themselves view sustainability as an issue that is an important part of their business values and foundation. Central and local management support validates the importance of team's work, helps prioritize and remove obstacles.

- Representatives from different business units, departments or cultures can ensure diverse perspectives and insights. These teams are all about "inclusivity" – new participants and new employees bring ideas.

- Turnover of team leadership provides new opportunities for leaders and ideas, and helps leaders avoid "burn out."

- Leading an Eco Team is an opportunity to develop and enhance leadership, project management and teamwork skills. We encourage all of our team leaders to include this role in their annual performance planning and to discuss their progress with their manager.

At Duke Energy, we've used sustainability as a way to unlock employee innovation – particularly as it relates to using resources more efficiently. In this tough economy, companies are doing what they

can to reduce costs. Employees have grown numb to directives to "cut their budgets" and "do more with less."

Sustainability and innovation are more creative and positive approaches to achieving those goals – it leads to "cost cutting that doesn't hurt."

At Duke Energy, we've found opportunities to reduce resources and associated costs through lifecycle awareness and process improvement. Our approach to sustainability encourages employees to "look beyond their walls" and redesign their work for efficiency and effectiveness.

Roberta Bowman

Duke Energy

www.duke-energy.com

One example: by developing a new “start up calculator” at one of our gas-fired power plants, we’ve safely and efficiently reduced the time needed to fire-up our plants – reducing emissions and saving several million dollars.

Having my main mandate to drive sustainability initiatives across Canada with a primary focus on community and the environment, I soon realized that tapping into our passionate employees is the key to making it a success.

Susan D’Souza

Staples

www.staplesadvantage.ca

Engaged employees are happy ones, more productive and committed ... resulting in a higher retention rate of talented employees who keep others motivated too.

These employees help drive your programs, keep it alive and “sustain” them so they flourish.

By engaging, investing and empowering our employees to embrace it, we all succeed. As we continue to embark on our sustainability journey, I realize that it is also crucial we consult and engage beyond our four walls.

It is essential we collaborate with our suppliers and customers to partner with them and leverage our sustainability initiatives together. After all the greater we align, the bigger the impact.

For making even medium, let alone large-scale, lasting change, employees need to be fully engaged around sustainability and it needs to be embedded into policies and day-to-day operational decisions. We’ve found that these key issues get pushed to the backburner due to the time commitment required and investment needed, but without these, sustainability cannot get engrained into every aspect of an organization.

Kevin Wilhelm, Emily Knudsen

Sustainable Business Consulting

www.sustainablebizconsulting.com

The three key ingredients: Training, Empowerment and Engagement.

Training – The first step is to provide the knowledge and tools employees need so they can contribute well-informed ideas. This is also a good

opportunity to persuade skeptics by explaining and touting the value of sustainability – increasing efficiency, cost savings, strengthening brand value, decreasing risk ... (you know the drill). Training can be delivered on high-level issues, but to make it stick, it should be detailed and tailored to different departments within the business.

Engagement – If employees weren’t on board before, hopefully the training will have sparked an interest. A few will probably demonstrate a particular passion. Find them and engage them! Get their ideas on how the company can better its environmental or social performance. Ask for their feedback on planned initiatives or those already underway. They’ll have a better gauge on the reception these initiatives may receive on the ground. These employees will also be key contact points in spreading the enthusiasm and communicating ideas to and from the already-established green team or sustainability officer to the rest of the company. Moreover, share examples internally of sustainability initiatives that have worked and saved money. This is key because once employees see what their co-workers have done, and that they are being praised for it, this will unleash a wave of creativity. They will realize that this isn’t rocket science and that they can do this within their jobs too, and begin to question why things

are done the way they are. This is a true motivator that will increase participation rate, and tap into the potential, innovation, and passion of each employee. They'll be making a difference in how the company is run and your business will benefit from the results.

Empowerment – Of course, none of this will be fruitful if employees aren't empowered to spend the time or contribute ideas on how their company can be more sustainable. For those that have enthusiasm and have promising ideas, be sure to nurture them and help give them the resources they need. Middle-management should be instructed to support their ideas, and if not fully acceptable, to help them develop a business plan that'll give them a path towards success. Managers need to help employees overcome organizational obstacles such as company culture and the "traditional mindset," and empower them find the solutions that are both profitable and sustainable. Lastly, employees should be encouraged to take action and know that it's okay to fail once in a while.

In 2011, our employee engagement partnership with Walmart came to fruition with paradigm-shifting impact. BBMG created the core identity and toolkit for My Sustainability Plan (MSP): the retailer's first global employee engagement platform aimed at helping its workforce lead greener, healthier lives.

Mitch Baranowski

BBMG

www.bbm.com

The biggest lesson from creating an initiative aimed at more than 2 million people across the globe? You've got to make engagement programs personally relevant.

Many employees simply won't act on sustainability issues because they seem too big and too complex. By instead framing issues in relatable terms and answering the important questions of "What can I do?" and "What's in it for me?" you'll set the stage for greater buy-in and success.

Not only that, you'll help create lasting behavior change that not only improves your organization via higher morale and lower turnover, but that helps make the world a better place.

Walmart's platform made it easy for employees to get involved by encouraging them to adopt simple, doable, repeatable actions most compelling to their own goals and culture.

In the United States, for example, health-focused goals like eating a salad every day or biking instead of driving proved most popular; while in Brazil community and family time won out.

A client once asked me if they had to tell their workforce that they were implementing ISO 14001. Labor relations were suffering badly and senior management believed that the union would overwhelm them with spurious non-conformances.

John Fraser

QMI-SAI Global

www.qmi-saiglobal.com

I've spoken on the fragmentation of the market for management systems. After the emergence of ISO 9001 and especially through the last decade, we saw a proliferation of ISO and sector-specific management system standards published.

The availability of these standards created a great opportunity. Where organizations once implemented a single system – which inevitably operated in isolation of how the organization fully functioned, organizations today are hitting a critical mass as they adopt combinations of ISO 9001, ISO 14001, OHSAS 18001, RC14001, e-Stewards, Responsible Recycling and soon ISO 50001.

Intentionally or not, as these management systems come up to speed within the organization, they increasingly encompass operational, maintenance, design, sales, marketing, HR, strategic and other functions and take on the form of a Business Management System (BMS). The tremendous advantage of a BMS is that we see it truly represent the entire organization. Continual improvement, customer satisfaction, protection of the environment, the health and safety of the workforce, energy performance and all the other management system commitments are re-defining the company culture, not solely pockets of it associated with a single management system. We see this in the engagement of the company's best assets – its people.

Five years ago, AMD began building its employee sustainability initiative called “Go Green.” Today we have approximately 1,660 registrants – including 24 percent of our North American workforce – and 10 Go Green teams.

The journey has involved building a rewarding partnership with our employees. Looking back, the following three strategies have been critical to supporting this grassroots sustainability effort.

1.) BROADEN THE MESSAGE: It is tough to reach a critical mass of employees participating in a sustainability program if it is only thought to be about the environment. Not many people wake up thinking, “how can I help the environment today?” However, everyone wants clean air and water, and

many are willing to help if it's easy, rewarding, and fun. Our initiative began with a Commuter Benefits Program, because everyone has to get to work. It incentivized the use of alternative transportation (i.e., rideshare, cycle, telework, and public transit) and allowed AMD to reduce our indirect (Scope 3) carbon footprint. Since the program began in July 2007, over

3.22 million miles of driving have been avoided along with 1,277 metric tons of CO₂, or as much carbon that can be absorbed by 32,700 trees grown for 10 years. After establishing a base of participation over 2-3 years, the initiative evolved into a “lifestyle” approach that promoted conservation at home, en route to work, and at the office. Of particular popularity among employees has been the “Go Green Newsletter,” which features bite-sized sustainability topics, suggested actions, jokes, and inspirational quotes that address environmental conservation, personal wellbeing, financial savings, and quality of life.

2.) REDUCE BARRIERS AND INCREASE MOTIVATORS: We surveyed employees to find out why they would or would not participate in Go Green Programs, and then we tried to reduce barriers and increase motivators. For example, in order to carpool to work, many employees wanted help finding ride-matches and to receive preferred parking, both of which we have provided. Other incentives include discounts on green products/services (such as farm-food delivery), electric vehicle charging stations, “eco-prize” drawings (i.e., reusable water bottles or bags), and discounts to bike shops for cycling. Demonstrating how an incentive can change behavior, one employee said, “I certainly would not ride my bike everyday to work if it wasn't for this Program.” To motivate and recognize exceptional participation, we held global “Employee Environmental Excellence” awards whereby winners received recognition on corporate communications, a custom bamboo plaque signed by our Director of Corporate Responsibility, and a presentation by a Site Executive.

3.) ENTER A DIALOG AND PARTNERSHIP WITH EMPLOYEES: While participation in sustainability programs is an important indicator of employee engagement, it only represents one-side of the two-way street. The other side is employee contribution towards sustainability efforts whereby they create and implement projects. Like more and more companies, AMD facilitates employee-led Green

Justin Murrill

AMD

www.amd.com

Teams as the medium for supporting dialogues and partnerships with employees. We are excited to have launched six new chapters in 2011 and to be working with ten Teams globally. Those Teams in turn are holding dialogues with their colleagues, thereby creating a multiplier effect of outreach and engagement. Our Green Teams' activities – such as recycling campaigns, employee contests, and energy audits – are particularly effective because they are fueled by passionate volunteers.

By allowing employee contribution, the benefits go both ways as shown in a recent survey we held among Green Team leaders whereby 96 percent agree or strongly agree that “Being able to contribute to a cause, while at work, improves [their] commitment to core job functions and to AMD.”

We were reminded in 2011 that the “small stuff” sometimes matters the most to employees.

Mid-year we initiated a plan to remove the remaining Styrofoam cups from our break rooms in

Bruce Klafter

Applied Materials, Inc.

www.appliedmaterials.com

North America. Over the years we had received many suggestions from employees asking us to do so and the material is not compostable (among other issues).

The cups were removed, a smaller number of paper cups were substituted and an extensive messaging campaign was launched (e.g. “Friends don't let friends use disposable cups.”)

Well, the initial email signaling the change generated more email than any other sustainability communication in recent memory. The responses ranged from applause (“It's about time!”) to some challenging questions (“Did you do a lifecycle analysis to support this change?” Note: we employ a lot of PhDs!)

By the time dust had settled, I was ready to change my title to Director of Mugs and Beverages. The lesson is that sustainability initiatives affecting the general employee population are both an opportunity and a challenge and sustainability teams should be ready.

Plus – anything related to coffee is much like a sacred cow in India!

There were so many substantive initiatives throughout the company in 2011 that paid for themselves financially, environmentally, and in sheer satisfaction – from implementation of innovative packaging designs to introduction of a new generation of high efficiency products, to opening of a new, efficient data center housing our 100 percent virtualized lab.

Kathrin Winkler

EMC Corporation

www.emc.com/sustainability

But the project that most shaped my thinking this year was a very humble drawing contest for employees' children – the EMC EcoKids Drawing Contest. It was conceived to harness the passion of children as a means to get their parents thinking. And the stories that came out of it left no doubt that it achieved that

purpose. The pictures themselves made us laugh, and sometimes cry.

But even more, the contest got us looking at employee engagement from a different perspective. We realized that we have to do more than provide direction and tools to the self-motivated employees that already consider themselves to be “green.” Nor can we just lecture the rest about why they should care more about the future of the planet.

What we need to do is to create visceral linkages between the principles of sustainability and

individuals' existing values and identities – as parents, as technologists, as competitive beings, as however they self-identify.

I often say that one of my favorite so-called sustainability books is *Made to Stick*, by Dan & Chip Heath. It is not about sustainability, per se, but about communicating ideas in a way that not only sticks, but is contagious. I think I'm going to start out 2012 by re-reading it. Here's to 2012 – the beginning of Post-Green Team Era!

design & innovation

How much more convenient and compact can you make a 6-foot folding table? That's the kind of question Canadian Tire Corp.'s Packaging Sustainability Network takes on every day.

Tyler Elm

Canadian Tire Corporation
www.corp.canadiantire.ca/EN/MAD/BusinessSustainability/Pages/default.aspx

When it came to right-sizing this product, the team managed to reduce its weight by 11.5 percent and cut its volume by 15 percent.

The table still met quality requirements, and the product and packaging improvements resulted in less material use, waste and greenhouse gas emissions associated with transporting the product to store shelves.

Furthermore, the improvements resulted in over \$160,000 in avoided costs, over 375,000 kg of avoided product and packaging material waste and nearly 4000 GJ in avoided transport fuel use.

We work with more than 400 vendors on similar projects to find innovative solutions to reduce costs for the business and the impact on the environment.

Like so many in the construction industry, we knew tablet computers were the way of the future. We decided to take our company philosophy of care, collaboration, and commitment to the next level by going completely paperless with regards to construction blueprints and jobsite schematics on the DaVita World Headquarters project in Denver, Colorado.

Graham Coddington

Saunders Construction, Inc.
www.saundersci.com

Up to the start of construction on the DaVita site, all of our company personnel still carried around four sets of paper drawings, which could end up being over 500 pages in total for each set.

In addition, every time a design change or update was made on paper, each worker would have to replace a page in their set.

This was very time-consuming, wasteful, and not always well organized. Inspiration for this paperless job site change came from our Corporate Social Responsibility (CSR) team, several of whom

were already involved in the DaVita project.

At the time, our CEO was exploring new and innovative ways to do things, so he was very receptive to the idea of a paperless jobsite and gave it the immediate go-ahead.

We researched several tablet computers on the market at the time and concluded that the Apple iPad was the best device suited for the task. With the approval and cooperation of DaVita, we were soon using the job site as our test platform for the iPads, ensuring this worked as expected before moving forward to expand and implement this system onto the rest of our job sites.

The move towards implementation of the new paperless system began in the preconstruction phase. Files were viewed with the help of Good Reader. Using this system, architects and designers were able to immediately get updated information to those in the field (or up on the construction scaffolding) without the loss of readability, time or image quality. On-site offices were also equipped with large interactive TV screens of varying sizes, so drawings could be referenced by the entire team at once.

The drawings were pushed to the devices from one location so that everyone viewed the most current information. In fact, we found out that any iPad could be connected to the larger screens in the main site office for individuals to review, share concerns, and gather focus and feedback – while keeping the drawings in complete sync.

For information to be used on construction sites it needs to be accessible to the trade workers putting the materials in place. On a traditional construction project this is done with various plan tables around the job site with paper sets of plans. Keeping these sets current with the correct information requires someone to take new paper copies to each plan table and update the set of plans when new information is issued. We decided that if we could be more efficient in getting information to the trade workers it would have the biggest impact on the project.

To do this we built a standalone digital plan table. Each digital plan table is able to move around the project and only needs a power outlet to be connected. At each station we have a large screen television that is connected to an iPad with the current documents. This set up allows all workers access to the most current information (e.g. plans, shop drawings, etc.) and can be updated with new information each night. By providing these digital plan tables on the project we are able to provide current information to the trade workers and reduce the time required for someone to update these plans.

One of the major issues we had to contend with was a concern over the actual hardware itself. Let's face it – while the iPad looks sleek and cool, it also looks fragile. Not an easy sell to a rugged concrete construction worker. This is where the education and trial process began. First and foremost, we let everyone know that (with some protection) the iPad could be dropped and withstand a certain amount of punishment on a jobsite.

We needed something that would help eliminate all those plastic drinking water bottles but retain the single serve, take away container. We couldn't convince our people to carry personal water bottles around their offices and to and from the cafeteria.

Todd Azadian

Boomerang Water

www.DrinkBoomerangWater.com

We also found the operational costs of recycling too high since we had limited space to store empty bottles. So we contracted a design company to create a solution for us. They came up with Boomerang Water System – a mini water bottling plant that resides in the customer's kitchen and is operated by a member of our kitchen staff.

The boomerang disinfects our custom-designed, reusable, aluminum drinking water bottles and

fills them with filtered municipal tap water.

It is highly profitable and reduces the school or company's drinking water carbon footprint by a factor of 15. We found it far more effective than trying to recycle. In fact, I liked it so much, I joined the company.

One of the most recent and visible successes from General Mills' sustainability journey is the new biomass burner at our Fridley, Minn., flour mill. Brought online in January 2011, the biomass unit burns oat hulls left over from the milling process to produce about 90 percent of the steam needed to heat the plant and produce oat flour used in making Cheerios and other products.

Larry Deeney

General Mills

www.generalmills.com

For decades, General Mills had been repurposing the 80,000 tons of oat hulls left over from the process of milling oats to make oat flour. They had been used as animal feed, as an ingredient in nylon and plastics and to make paper and packaging products. We

continued to search for an even more economical and beneficial use for the oat hulls for more than 20 years. We knew that oat hulls have the same BTU value, or energy potential, as bituminous coal. We had been gathering information and experience about using oat hulls as a fuel, but much of that information did not transfer. Most biomass burner operations use biomass that may include oat hulls and other plant material in order to generate electricity or a specialized type of heat. But we wanted a system that could use 100 percent oat hulls to generate steam for our processing system.

This approach of using entirely oat hulls was new to the industry and to our company. We began formulating a plan for our own biomass burner. We visited operations that used biomass to create steam, and we brought together a team of oat milling specialists, environmental engineers, process engineers and capital investment experts. The biomass burner was started up in December 2010, and was online by January 2011, and has been successfully powering the processing and heating at our Fridley mill ever since.

Our biomass burner has addressed two compelling business needs – saving money and reducing our footprint on the environment for years to come. Burning oat hulls on site reduces our reliance on natural gas, saving nearly \$400,000 annually, and cuts our carbon footprint by more than 20 percent. And since we burn oat hulls at the same location where they are produced, we eliminate the environmental impact and cost of shipping them to a burner. Besides producing steam and heat for our plant, our oat hulls are also used by a nearby biomass plant to power approximately 17,000 homes a year.

The benefits from this project continue beyond energy. After the oat hulls have been burned, the resulting ash is captured and distributed to nearby farmers who use it as a nutrient supplement to improve the soil on agricultural land.

What stunned me in 2011 about progress in the US toward a more sustainable economy is that, while the Fortune 250 are all over it – some more authentically than others, of course – the vast majority of middle-market and smaller companies just don't get it.

Not only are they not imitating their larger brethren with sustainability initiatives in their own operations, many of them don't know what sustainability means or that it's even a subject of discussion.

There are lots of reasons why the leaders of smaller organizations don't embrace sustainable

business practices, ranging from political bias (“It’s a left wing conspiracy to drive regulation”) to plain ignorance of what sustainability is all about (“I don’t have \$500K to put a windmill on my roof”).

It’s a widely held view that small, privately owned businesses are the life-blood of the US economy, its innovation engine and the primary source of new jobs.

For those of us who believe that sustainable business – done right – is a powerful driver of innovation, competitive advantage and improved financial performance, it’s become clear that sustainable business is one area where the small business engine isn’t firing on all cylinders and is

ignoring a critical way to make itself – and our ailing economy – more competitive.

Perhaps one way to change this is to highlight stories of smaller companies that have turned around their fortunes or otherwise achieved marketplace success through a strategy based on the principles of sustainable business.

Graham Russell

Trupoint Advisors

www.trupointadvisors.com;

www.denvergreenstreets.com

Here’s one such story in which a 35-person coffee roaster in Denver – Boyer’s Coffee – has revived its struggling business with an ongoing series of sustainability initiatives that are at least as impressive as those at WalMart or DuPont that we can read about daily.

Like many successful sustainability journeys, Boyer’s started with waste reduction. Re-thinking its entire coffee packaging operation reduced packaging film waste and labor costs by about 30 percent and inventory carrying costs by \$200,000. The much smaller volume of waste film (together with empty coffee bags returned from customers) is now shipped off to ITW Angleboard, which repurposes it into the L-shaped vertical bracing bars that help stabilize material loaded onto pallets (“One man’s waste etc., etc.”!!)

Boyer’s delivers coffee to retail customers in big cardboard cartons. Instead of simply leaving them behind for recycling at the customers’ premises, it arranged to bring them back for re-use, thereby increasing usage from one time to an average of 5-6 times and slashing annual carton costs by over 50 percent or \$50,000.

This in turn led to the realization that they could switch from cardboard cartons to robust, fluted plastic “pop-up” cartons which not only don’t cost time and materials in taping but can be used over 100 times before they deteriorate. Boyer’s is about to invest \$50,000 in the first batch of these new cartons. Each costs five times as much as a cardboard carton but the supplier (Technology Container Corporation, Shrewsbury, MA) estimates their use will cut Boyer’s costs by \$450-500,000 over 5 years with a payback of just a few months on that initial investment.

Using the new cartons will reduce energy consumption by 5.8 billion BTU, cut 400 tons of CO2 equivalent, and reduce solid waste disposal by 97 percent or 70 tons over the 5 years.

All this “reducing, re-using and recycling” will have cut the cost of Boyer’s own trash costs by over 50 percent a year by the time the new cartons are in full use. The company will be embarking on energy reduction programs in 2012, starting with replacing old fluorescents with LED lighting in its roasting/ packaging shop.

What’s the point? Sustainability is just as good for the SmallMarts as it is for the WalMarts. Perhaps 2012 will be the year its benefits start to become mainstream in our small and medium-sized enterprises.

In October, 2011, Tim Hortons launched a new Cup-to-Tray recycling program in Nova Scotia that allows hot beverage cups to be collected from all 156 traditional restaurants in the province and converted into our take-out trays.

Carol Patterson

Tim Hortons Inc.

www.timhortons.com

A month later, the program was expanded to Vernon, British Columbia. It was through collaboration with our partners Scotia Recycling Limited and paper product manufacturer CKF Inc. that this program was made possible.

For more than two years, these companies worked with Tim Hortons to identify recycling solutions for our hot beverage cups and develop the Cup-to-Tray program.

It is in the hands of our guests to bring their used hot beverage cups back to our restaurants and utilize the multi-stream recycling units available. In addition to the new Cup-To-Tray program, successful diversion initiatives are in place at over 500 of our restaurant locations across Canada.

Here are 1E's top tips for an IT efficient 2012:

Sumir Karayi

1E

www.1e.com

1.) Power down all PCs when not in use: PC power cost is the biggest IT cost, accounting for up to 25 percent of overall building costs. There are approximately 1 billion corporate PCs in use today, but 50 percent of those who use a PC at work typically do not to shut down their PC at the end of the day or on weekends. The potential savings cannot be ignored; consider that a one night shut down of the world's PCs would save enough energy to power the Empire State Building for 30 years.

2.) Make sure your servers are doing useful work: on average one sixth (15 percent) of servers are not doing any useful work. \$24.7 billion (£15 billion) is wasted globally every year on hardware, maintenance, management, energy and cooling for those unused servers. Reining those servers in would produce \$3.8 billion (£2.4 billion) in energy cost savings alone and prevent 11.8 million tons of CO2 – the same amount produced by 2.1 million cars – from entering the atmosphere .

3.) Automate requests to the IT helpdesk: self-service IT allows users to install software, operating systems and services at a time that suits them, without disrupting their daily workload. This minimizes requests to the helpdesk and delivers savings of \$40 (£24) on average per request . Independent research has revealed that two thirds of users in the United States and United Kingdom wait up to a week or more to get the software they request through the IT helpdesk.

4.) Only pay for the software you use: there is \$15 billion of preventable and ongoing costs associated with unused software and shelfware within organizations in the United States and the United Kingdom. This is a significant drain on IT budgets and equates to approximately \$400 of software waste on each corporate PC. What's worse is that almost three quarters of organizations in the United States (71 percent) and United Kingdom (68 percent) admit to having software waste. Software asset managers must use new discovery tools to identify and eliminate software waste and ensure that their organization is only paying for the software they actually use.

5.) Avoid network outages and keep systems patched and secure: businesses must have uninterrupted network access for key business applications such as email, for sharing files and VoIP telephony but the IT department also needs to use the network to install new software, keep systems patched and secure and to upgrade to Windows 7 or Office 2010. The last thing that any system

administrator wants to do is cause a system outage. Administrators need to ensure that key IT data transfers never interrupt the business.

waste & recycling

Last spring we informally and formally surveyed hundreds of businesses from across Ontario about their end-of-life-technology management strategies. As I poured over the results of both, I couldn't help but see a great opportunity to amplify our efforts – of those businesses surveyed, two-

Sandra Pakosh

Ontario Electronic Stewardship
www.ontarioelectronicstewardship.com

thirds did not have a plan for end-of-life electronics reuse or recycling.

There is overwhelming evidence that having a plan in place is a sound business practice: it helps businesses eliminate the unnecessary costs of storing retired technologies; it creates a more environmentally (and socially) responsible organization; and it helps generate

jobs – here in Ontario, seven jobs are created for every 1,000 tons of waste recycled.

The issue of cost savings is critical for businesses because in this instance 'cost' must be understood in two interrelated ways: the 'liability' cost of improperly disposing corporate electronics that carry sensitive data, and the very real monetary costs of identity theft – according to the U.S. Cost of a Data Breach: 2010 Annual Study, the average cost of a corporate data breach reached \$7.2 million.

Here are a few key questions to ask as part of the IT asset management lifecycle:

- How much will this item cost to dispose of safely at the end-of-life?
- What are our options for recycling this item or reusing it within our organization?
- Is there a possibility that by working with a partner we can create a second life for this item?
- What can we do to limit e-waste?
- Do we need to upgrade computer hardware or other electronic devices as often?

Answering these simple questions is the first step in the very valuable 'reduce, reuse, recycle' process.

As one of the nation's largest providers of uniforms and apparel programs, we continually look for ways that we can improve the sustainability of our operation and the operations of the businesses we

Pamela Coleman

Cintas Corporation
www.cintas.com

serve. One way we have been able to do this is through our eco-apparel program.

Products in our eco-apparel line are made from recycled polyester fiber. Developed from renewable raw materials such as recycled plastic bottles, the recycled polyester products save natural resources and reduce waste. From eco-polo shirts to washable tuxedos, these products substantially limit the amount

of water and energy consumed.

Products such as our Regeneration Suiting lessen landfill waste by eliminating as many as 25 2-liter plastic bottles from the waste stream. Many of the suiting options in our eco-apparel line can be laundered at home, thereby reducing the need for harsh dry cleaning chemicals. In fiscal year 2011, we repurposed more than 2.5 million plastic bottles, transforming post-consumer waste into functional and stylish garments.

With reprocessed devices costing approximately half that of single-use OEM devices, reprocessing programs have become proven solutions for addressing medical, economic and environmental.

Dan Humphrey

Memorial Hermann

www.memorialhermann.org

Since Memorial Hermann began employing reprocessing programs in 2005, we have realized considerable cost savings and diverted thousands of pounds of waste from landfills.

Through a partnership with Stryker Sustainability Solutions, we will realize \$2 million in guaranteed supply chain savings for our hospital system through the implementation of medical device reprocessing programs in 2012.

As we consider impending cost reductions, we anticipate that savings resulting from reprocessing will help us greatly in meeting our goals. By initiating reprocessing programs across various groups, Memorial Hermann will be on track to exceed the amount of waste diverted from landfills in 2011 – more than 72,000 pounds – as well as add \$2 million to our bottom line.

We conducted a recycling challenge with a single tenant that occupies six floors at a commercial office building. The goal was to increase employee compliance with the building's recycling program through education, visibility and awareness. The challenge exceeded our expectations.

Amy Marpman

Great Forest

www.greatforest.com

We set a baseline by tracking the amount of trash and recyclables generated from each floor for three months. Once the floor-by floor challenge began, we continued tracking, and also conducted spot checks of employee desk-side trash cans to see the level of employee compliance.

We combined the volumes of materials with the compliance observations into an overall recycling score.

Each department nominated 'Green Ambassadors' to champion and educate employees about the competition. At the end of each month employees were provided with the results.

At the end of the competition there were significant increases in the recycling score of every single floor. The only prize offered was recognition.

The key to making this challenge a success was continual feedback to employees on how their floor was doing, combined with active engagement and support from upper management.

The tenant is so excited about this effort that they plan to continue spot checks on a monthly basis on their own and will profile employees who are doing well.

Grand Teton Lodge Company (GTLC) has been the largest concessioner in Grand Teton National Park for the past 60 years, providing lodging, food and beverage, activities and retail services to the Park's estimated 2.6 million annual visitors.

Gina MacIlwraith

Grand Teton Lodge Company
www.gtfc.com

In 2011, GTLC not only voluntarily removed all individual bottled water from its lodging and food and beverage operations, but also in the retail outlets throughout the park. In turn, we installed Water Filling Stations throughout our operations for all park visitors to refill their reusable bottles, which provided over

15,000 gallons of drinking water in 5 months.

I knew this initiative was successful when I saw a large family reunion group, each with their new reusable water bottles, using the Water Filling Station at GTLC's grocery store. The previous year I likely would have seen this same family coming out of the grocery store with a case of bottled water.

Shannon West

Verizon Communications
www.verizon.com/sustainability

Our Office Supply Swap Events have achieved a trifecta of benefits:

- 1.) Cost Savings Benefits
- 2.) Environmental Benefits
- 3.) Philanthropy Benefits

At swap events, Verizon employees bring unused office supplies to a central location, pick out new

supplies, and at the end of the day, whatever is not collected is either recycled or donated to local charities.

Cost savings are achieved by avoiding the expense of buying new supplies, cleaning out office space, recycling whatever products might be old or no longer useful, and providing benefits to local agencies in need.

Since the program was launched in October 2009, we have conducted 38 Office Supply Swaps across the nation, donating more than 1,100 boxes of supplies to local charities, and contributing to the 344,895 pounds of material collected for recycling and avoiding 537 tons of CO2 at these events.

The events have been so popular and successful that in 2011 we established the first permanent Office Supply Swap location in Irving Texas and are currently looking for other opportunities to establish permanent locations.

In 2011, General Motors added eight manufacturing sites and nine non-manufacturing facilities to its global landfill-free list, bringing its total count to 81 plants and 16 non-manufacturing facilities.

There are several landfill-free lessons to be gleaned from 2011.

John Bradburn

General Motors
www.gm.com

Remain committed to all facilities – old and new. In 2011, GM converted plants like Bay City Powertrain and Pontiac Metal Center that have been around for 75 years or more. All it takes is a little perseverance and dedication to find ways to reduce waste and increase efficiency within the current infrastructure. For example, manufacturing plants can generate loose filter media – a plastic-like byproduct of machining

operations that challenges the industry. At Bay City Powertrain, a supplier now shakes it and removes the metal for recycling. The rest is then converted to energy. Although newer plants often feature equipment that does this processing, Bay City achieved 100 percent efficiency using traditional tactics.

Plan for the future to sustain landfill-free status. Among other efficiency improvements, GM took into account potential future manufacturing scenarios to achieve its landfill-free designations. An example is proactively planning for waste streams like sludge even if a facility may not generate it today.

Thrive on data and share best practices. New landfill-free sites in 2011 are in Argentina, India, Italy, France, Germany and the United States. Reporting allows GM to share lessons learned globally, and it does this by:

- Hosting quarterly and as-needed web-based global conference calls specific to waste reduction efforts where experts from each region participate and spread out lessons learned to their teams.
- Hosting as-needed commodity-specific calls, as well as regular resource management calls with suppliers.
- Sharing best practice documents on specific processes and technologies. Tie revenue to waste streams.

Tying revenue to various waste streams tends to generate more interest and helps GM approach waste reduction from a sustainable financial perspective. For example, if the company generates 100 tons of cardboard per year, and it makes \$150 per ton, it often gets the company thinking what we can do to get that number even higher.

At a customer care office in Flint, Mich., GM is using a patented technology from a supplier that shears and separates cardboard boxes screwed onto wood pallets. Because pallets are recycled at a pallet recycler and cardboard at paper recyclers, the two need to be separated efficiently. The technology not only enabled the facility to earn landfill-free status this year, but the office now generates \$20,000 a month from recycling its cardboard.

Strengthen supplier relationships and collaborate freely to turn ideas into reality. We work with our supply base to rethink product design to avoid scrap and recycle waste into plant supplies or car parts. When you combine data with employee engagement, you can create best practices and drive them throughout the entire organization, spreading them throughout the supply chain to get more benefits. Suppliers are instrumental in helping us reduce waste streams. With their help, we developed a method to convert 227 miles of oil-soaked booms off the Alabama and Louisiana coasts and turn it into air deflectors in the 2012 Chevrolet Volt, eliminating 212,500 pounds of waste from entering our nation's landfills.

We used process mapping, a technique that Delta Institute uses to help identify material inputs and wastes in connection with sustainability planning, to help a manufacturer of stainless steel

drums identify opportunity areas for expansion and development of its sustainability program, including waste reduction, materials conservation and employee practices.

The company was immediately able to realize savings from one simple, previously overlooked waste management practice: It literally turned "rags to riches" by recycling and reusing process rags which had

previously been discarded, saving thousands of dollars per year.

With water shortages and costs soaring, similar savings can be gained by finding ways to conserve water and recycle water for non-potable purposes. And with landfills closing and growing restrictions on

Abby Corso

Delta Institute

www.delta-institute.org

disposal of construction and demolition debris and e-waste, it will pay for companies to reclaim, recycle or resell as much of this waste as possible to a rapidly growing waste-to-profit marketplace.

P&G's Global Asset Recovery Purchasing (GARP) team is a dedicated group of experts created in 2007 to find beneficial re-use applications for waste. The team – now 35 experts strong – finds innovative ways to reduce the company's remaining waste, working to find external partners who can turn waste and non-performing inventory into something useful.

Maggie Habib

Citizen Paine for P&G Sustainability
www.pg.com/sustainability

This simple philosophy often changes a disposal cost into revenue, improving both the environmental and economic sustainability of sites' waste management systems. GARP partners with 20 external

companies – called Site Solution Providers (SSPs) – who specialize in providing waste management solutions for P&G manufacturing plants and distribution centers.

A Process to Re-Apply

- 1.) Create a full time expert team – ensure they have presence in every geography in which you operate.
- 2.) Brand yourself – market your team and capabilities internally to your company.
- 3.) Partner – both inside and outside your company. In fact, P&G aims to get half of its innovative ideas from external sources, industry experts and suppliers.
- 4.) Target both types of green – environmental savings and cost savings.
- 5.) Get the data (tons, costs and revenues) and get it right – then focus on the biggest opportunities.
- 6.) Share the success – often multi function teams are required to deliver alternative use projects.
- 7.) Celebrate and market results – GARP results are published in P&G's Annual Sustainability Report and shared internally.

Why Invest in a Recycling Management Strategy Now? For starters, in many cases, it's the law. Product environmental and end-of-life legislation and regulations – like the European Union's WEEE

Jennifer Scholze

SAP
www.sap.com/solutions/business-suite/erp/corporate_services/recycling-administration-software

(Waste Electrical and Electronic Equipment) directive – are increasing in number, scope, and complexity. And while the European Union has led the way in regulating extended producer responsibility and product take-back, Japan, Korea, China as well as U.S. states are getting more aggressive in issuing and enforcing regulations for electronic devices or battery recycling and disposal. And these regulations are no less serious in terms of their goals, requirements, and

consequences for non-compliance. Similar to the EU markets, regulations in the U.S. vary from state to state, so ensuring compliance is a challenge.

Secondly, there are top-line revenue implications to your recycling strategy. Consumers are certainly more knowledgeable about "green" aspects of the products they purchase and are exchanging product experience in social media networks. Companies that commit green violations or get fined for

non-compliance can suffer serious brand damage in the market, while those that are recognized by industry groups and non-governmental organizations for their packaging, recyclability and sustainability efforts see measurable benefits and often see gains in market share. And for manufacturers in the consumer packaged goods market, mandates from retailers provide another reason to invest in developing a detailed product and packaging recycling strategy.

Major retailers – like Walmart in the U.S. and Tesco in Europe – are raising the bar by requiring suppliers to provide detailed product and packaging composition and recycling information which they can roll up into their own supply chain data IT plays an important role in developing product recycling and reuse strategies as large amounts of data need to be managed for the regulatory reporting. But surprisingly, many companies today still rely on multiple, disparate systems for storing and reporting the necessary data for this important initiative.

Companies often track detailed sales information separately from product and packaging bill of materials. Leveraging the power of an integrated environment can streamline a manufacturer's regulatory compliance processes, reduce compliance costs, and even increase the amount of recyclable materials in a manufacturer's products.

Accurate reporting is the key to maintaining regulatory compliance at the lowest cost. Developing and executing a recycling management strategy is the first step, but collecting the right data in the right reports provides the evidence sought by regulators, retailers and auditors alike. For example, for some regulations, companies must track the quantity of products being sold by country or region and calculate recycling fees based on many factors including price lists, correct weight, and other contractual conditions.

Many companies lack the visibility on all the details, for example the exact weight that needs to be taken into consideration to produce a correct fee. Therefore to be on the safe side, most companies knowingly overpay the fee by basing it on the gross weight of the product.

By leveraging a strong information technology platform, manufacturers can classify recyclable materials by type, net weight, usage, destination, brand, and category. Specific data filter separate material streams and components out that are not relevant to the required calculation. With this information, regulatory recycling fees can be calculated accurately based on actual weight of the regulated components as listed in the bill of materials, not total weight of the end product being shipped. This difference has saved electronics giant Panasonic 15 percent per year in recycling costs, a number that puts the savings in the millions.

After 10 consecutive years of strong recycling efforts in Union City, Calif., – named winners of the WRAP (Waste Reductions Award Program) for all 10 of those years – we began to measure our trash and recycling.

Laurel Weiland

American Licorice

www.americanlicorice.com

We've realized thousands of dollars of savings in reduced landfill charges as well as income generated from recycling. We've been collecting recycling weights for at least a few years, thanks to the StopWaste program in Alameda County. We began to collect trash weights as well.

After building a database, we found that our recycling efforts were indeed strong, at a 90 percent rate. Our next project was to assess our waste to see what else could be reduced or recycled. After this assessment, we saw the potential to set a Zero Waste goal.

Many materials that were being thrown away were recyclable, or we could just stop using them.

Our initial focus has been to correct mistakes in throwing away already recyclable materials, such as paper and plastic materials used in manufacturing. We set out to evaluate and adjust our bin system, making sure that we had a logical and consistent system of bin colors and labels and that bins are placed strategically in areas where associates work.

We began to communicate the recycling rate to the associates and asked them to work on recycling all paper and plastic. The associates became even more engaged in our waste reduction efforts, and after three months, our recycling rate increased from 90 percent and 92 percent.

We also began to look a recycling or reusing new materials. We found a recycler for hairnets used at the plants. We began to speak with TriCed regarding composting our food waste. These two actions alone could bring us dramatically closer to Zero Waste.

In LaPorte, Indiana, we're working through a similar process, with an organized system of bins, measurement, and waste assessment. We're now asking our associates to write down ideas for waste reduction on white boards in each location. We recently joined the EPA's WasteWise program and are reporting our baseline waste information to the program.

American Licorice's goal is to be zero waste across all locations, Union City, California, LaPorte, Indiana, and Bend, Oregon, by the year 2016.

Our program at Schick Manufacturing, Inc.'s Milford, Conn., site has increased their average recycling rate from 39 percent in 2009 to 89 percent in 2010 while boosting their recycling revenues 500 percent.

We have sustained that performance through 2011 with an average recycling rate topping 90 percent.

Robert Render

A Greener Solution

www.agreenersolution.com

As with other clients, we found that the biggest initial challenge was not identifying what material was recyclable. Rather, it involved figuring out how to efficiently collect the material within the facility and handle the internal logistics of moving it out of the plant in a way that maximized its value.

The Milford facility is divided into manufacturing cells with limited floor space, contributing further to the challenge. Our solution was to place an Orwak 5010-E mini-baler at the end of each of the seven packaging lines to collect recyclable material including packaging film, strapping, cardboard and plastic trim. The mini-balers have a compact footprint and run on 110V, so they require minimal space and can easily be moved for maintenance or relocated to accommodate changes in the manufacturing cell design.

Thanks to the mini-baler's 6:1 compression ratio, bins that would have weighed only 60 pounds non-baled or non-compacted are now able to hold close to 400 pounds, minimizing handling and freight costs.

With this and other solutions, the plant now diverts an average of 360,000 pounds of material per month that was previously landfilled and has eliminated the need for any trash compactors on-site.

water management

The vast majority of beverage bottle fillers are fitted with vacuum systems in order to remove oxygen from the beverage during the filling process.

Michael Alexander

Diageo

www.diageo.com

Most of these bottle filling machines generate vacuum using a device known as a liquid ring pump which uses a “ring” of water as a seal in between the housing and the impeller of the pump. The water in the seal of these pumps must be continuously refreshed in order to keep it cool, so that capacity and vacuum level can be maintained without the water boiling, this requires a significant amount of water.

With a view to significantly reducing the amount of water used by the bottle filler vacuum pumps, Diageo investigated several different technological solutions. The option chosen for our Huntingwood facility in New South Wales, Australia was a ‘liquid ring and chiller’ system which involved fitting a stand-alone chiller to the existing liquid ring vacuum pumps.

The installation of a small air conditioning style water chiller into the seal water circuit and again recycling the water dramatically reduced water use during the filling process.

The energy consumption of this system compared with an equivalent radiator system is likely to be slightly less due to the smaller energy requirement in maintaining the liquid ring – as when using a radiator the vacuum pump needs to be oversized. Encouraging local teams to develop solutions for local problems can herald innovative results and is something which Diageo advocates throughout our business.

Two of these systems were installed at the Huntingwood site and the results were impressive: Estimated total reduction in water use at the site of 36,000,000 liters per annum for the two bottling lines operating the new technology (the equivalent to 14 Olympic-sized swimming pools) – a net cost saving of \$40,600.

The cost of both systems was around \$26,790, with an ROI of around 8 months. The cost of both systems was around \$26,000 AUD therefore the ROI was around 8 months.

Similar systems to that at Huntingwood have since been installed at other sites, for example at our Achimota and Kaasi breweries in Ghana as well as our packaging plant in Runcorn, UK.

One of the lessons I have learned over the past 20 years, as a manufacturer of no-water urinal systems, when trying to convince facility managers to become more water conscious and sustainable is that it is not the easiest thing to do. In fact, there very often is considerable resistance.

Niki Bradley

Marketing Manager

www.waterless.com

Some of the resistance I have encountered includes the following:

- Reluctance to change from how things have been done before.
- Reluctance, in general, to believe they must become more sustainable.

- Disbelief that there really is a water shortage brewing, which won't be corrected by a major rainfall event.

A great deal of this reluctance was evident a decade or more ago. Fortunately, most business owners and facility managers are far more water conscious today than they were even five years ago; however, the problem still exists.

The best way to deal with this situation – whether the property involved is a business, a major office building, or a residence – is to talk about dollars and cents. This has its own set of complications when it comes to water because water and sewer rates have only gradually increased over the years. Some, if not most, end-users are unaware of just how much these costs have increased over the span of decades. And, the only way to address this is to show them.

A perfect example is a golf course in California. Like many golf courses, this one was being pressured by local government officials to find ways to reduce water consumption. One of the course owners' first steps in reducing water needs was to conduct a water audit. This audit showed exactly where and how much water was currently being used.

Part of the process involved collecting old water bills. For what can only be termed as a "significant surprise," golf course owners realized they were paying about \$15,000 per year in the 1970s in water/sewer charges and today they are paying about \$300,000 annually for using approximately the same amount of water.

As mentioned earlier, most business owners and facility managers today are more conscious about using all natural resources, including water. And many have instituted policies to reduce consumption and use these resources more responsibly. However, reluctance's ugly head still surfaces and often it is quite difficult to put these sustainable policies into practice.

My only advice, and this is based on my 20 years of dealing with this situation, is simple: pull out the calculator and show them how much it is costing not to be sustainable and water conscious—this usually makes them get serious about sustainability.

marketing

As consultants, we have been witnessing a long-standing discussion amongst global and domestic brands that always ends with the convenient excuse – consumers are not willing to pay more. Not

untrue. Until now, most consumers in China have been making choices based on one metric: PRICE. Price is the thing they understand, so cost becomes the main force in how things are made and marketed.

As consumers demand quicker access to a greater quantity of cheaper products, brands with 'business as usual' strategies create a powerful downward pressure on suppliers that reward rock-bottom wages, long

hours, and hazardous working conditions, as well as toxic materials and dangerous pollutants in local rivers and landfills.

So we are presented with the common dilemma over which came first: the chicken or the egg?

Mihela Hladin

Greennovate (Shanghai)

www.greennovate.net

Similarly, consumers and brands are creating a vicious cycle that is taking a toll on resources, generating waste and affecting the quality of life. This is not a local case, it's global.

The only difference for consumers in China is, that they experience all three effects on a daily basis. Brands are so far not trying or willing to educate consumers about environmental and social impacts because they are still tiptoeing around their own practices and levels of transparency. Chinese consumers then have insufficient credible and easy to understand resources to educate themselves when it comes to rewarding better brands and products.

What it boils down to: Transparency is just a fancy word for honesty. With China and their domestic consumption skyrocketing off the charts, the real change should come from consumer behavior. There are many organizations and individuals out there that have been working at all levels, building a common understanding of the effects that chemicals have on people and the environment so brands can improve their practices in China. But none of these organizations can be truly effective unless their work filters down to the consumer level.

There is another important factor that supports the change in consumer behavior in China. In the social media world, brands no longer control the conversations. For the first time, there is a dialogue going on, one in which consumers have the power not only to vote for better products with their wallets, but to influence their social circles to do the same. This is creating an ever-growing force that could present great opportunity on one hand, but also awkward moments for less than transparent brands in the Chinese market on the other.

NH Hotels has launched the Substantive NH Club, a club formed by our suppliers, dedicated to the pursuit of initiatives and solutions for the hospitality industry. Thanks to this club we have introduced projects such as oxo-biodegradable amenity packaging, recycling cork (Cork to Cork project), and OTIS elevators that generate energy.

In 1991, the Swedish Market Court sentenced General Motors by prohibiting their advertising campaign, where the Opel Omega was marketed as “environmentally friendly.” The verdict stated that a product typically considered as having a negative impact on the environment can never be said to be environmentally friendly.

The court said that the expression “environmentally friendly” in the strict sense can only be used for products that improve the environment, or at least have no negative effect on the environment. This verdict has, since then, often been referred to in subsequent judgments and in the handling of complaints received by the Swedish Consumer Agency and the Consumer Ombudsman. It is hardly surprising

that “environmentally friendly” was banned. The expression is vague and in most cases by no means true. It is therefore more surprising that so many marketers still seem to be fond of the expression “environmentally friendly.”

Other statements that are considered vague and therefore not to be used in marketing is “green,” “nature’s friend” and the like. Environmental marketing claims should be specific, relevant and possible to verify through available documentation. This is well established by business internationally, through the standard ISO 14021 on environmental claims as well as in the International Chamber of Commerce, ICC Framework for Responsible Environmental Marketing Communications.

Luis Ortega Cobo

NH Hotels

medioambiente.nh-hoteles.es/en/start

Lars Jonsson

Yttra

www.yttra.se/english

These simple rules should guide all businesses that wish to describe the environmental performance of their goods and services. Marketing Practices Law worldwide usually states that all marketing shall apply to good marketing practices. Good marketing practice being referred to as general advice from market supervising authorities, proven industry practices, international standards and codes of conduct.

This means that the international standard ISO 14021 on environmental claims, as well as ICC's rules on environmental advertising actually becomes binding. These two documents are used as basis for assessment by stakeholders on the market and in the review carried out by supervising authorities and the lawyers. Anyone who, in marketing their goods and services, intends to describe the impact on the environment must therefore be familiar with the contents of these two documents.

One way to ensure that these codes are followed is to develop a specifically tailored guidance within an industry sector. An example is the Swedish Automotive Industry Association, which produced its "Guidelines for the use of environmental claims in marketing of new passenger cars, trucks and buses." The guidance is based on ISO 14021 and the ICC's rules as well as Swedish law. The document, in the form of a leaflet, provides practical advice for the Automotive Industry Association's member companies such as car importers and dealers when they want to market a vehicle's environmental performance.

As I reflect on another year of environmental initiatives I only know one thing for certain: they are complex.

Chris Corbin

Lotic Water Marketing
www.loticwater.com

The experts, close to the fire, can speak ad nauseum about the work they execute with passion. The challenge is overcoming these communication barriers so the general public can not only understand, but, more importantly, engage in the cause.

The gap between the two is what I call "marketing." Filling this gap is the difference between a dying cause and a great idea. I encourage all environmental practitioners to take a step back focus on the message as much as the means.

Tell your story. Simply.

Many architects are asking me how to change their marketing approaches to sustainable design services, since green building experience and expertise no longer confers specific competitive advantage, even to those who have been doing green projects since 2000 or 2005 and who have lots of LEED certified projects to their credit.

Jerry Yudelson

Yudelson Associates
www.greenbuildconsult.com

This concern is a reminder that nothing stays static in this business. What do firms need to do to maintain their focus on sustainability, but gain more advantage from this form of branding? I think there are three key steps to take right now.

Raise the Stakes – Stop resting on your laurels and start reinvesting in building the sustainable brand.

That means getting your people out to conferences as presenters, especially where the client base is likely to hear them. Commission white papers on key sustainable topics. Write articles and op-ed pieces for leading client-focused trade and professional journals. Publish a 60-to100-page hardbound

book on each of your projects, as many leading European firms do, and get it in client's hands. With some practice, this can be done well for \$25,000 or less per book; for a \$50 million project that brought \$4 million gross revenues in the door, this amount can be budgeted easily and is a lot cheaper than continuing to spend tens of thousands each on the vain pursuit of endless projects against equally credentialed competitors.

Narrow the Focus – One key tenet of professional services marketing strategy is that you can't be everything to everyone. You need to be something really special to a few key clients. For example, a firm might be known for doing museums and libraries in higher education. Keep that focus but extend the geographic reach of your business. Take as examples how HOK Sport and Ellerbe Beckett dominated the sports arena business. After all, key decisions on such projects are often made by a handful of influential experts, as compared, say, with higher education classroom/office buildings or dormitories, with which large numbers of firms have experience and which are often subject to wider influences. With this narrowing of focus, you'll find that it's more possible to place your experts at the top of the field and to get them key speaking and presentation assignments. Library directors like to talk with library design experts, museum directors with museum experts, etc.

Become Fully Engaged in the Conversation – Sustainable design is evolving quickly into categories such as the 2030 Challenge, Living Building Challenge, Zero Net Energy Projects, Regenerative Buildings, Max Green goals, etc., each of which has various categories of experts, thought leaders, along with new practices, technologies and systems. In the Living Building Challenge, for example, you'll have to focus as much on sustainable design for the water cycle as for the energy cycle. This creates both opportunities and challenges inside the firm, but gives you new chances to reassert, reclaim and reinvent your sustainable design expertise.

Each of these practice areas has passionate advocates, so find people in your firm who care about each of these issue areas and get them into the conversation. Use social media to follow, participate in and then influence the discussions that are taking place daily.

Two years ago Vista Host implemented several sustainable business practices following the model of their nationally recognized Courtyard by Marriott in Fayetteville, Arkansas.

T.J. Angeleno

Vista Host Hotel Management
www.VistaHost.com

One of the most successful components of this initiative has been the Newspaper Waste Reduction program.

As several hotel brands have revised their standards for paper delivery to guest rooms, Vista Host took it a step further. While we agree with the brands in the regard that travelers are migrating away from newspapers and utilizing more on-line publications, we

also recognize that there are guests that still appreciate receiving a newspaper and we did not want to disappoint by eliminating this service.

Rather than complying with the brands standards, limiting or removing room-to-room delivery, we began asking every guest upon check-in if they would like a newspaper and delivering and ordering based upon this request.

By asking guests in 2011 the company has removed more than 300,000 newspapers from the waste stream for guests who have declined the offer a newspaper.

The initiative has resulted in annual savings of more than \$80,000.

Twenty years ago, it was known as pollution prevention, now it's dubbed "sustainability." What has changed? The customer.

Sydney C. Randell

US Postal Service
www.usps.com

Twenty years ago, organizations hired environmental professionals to manage their compliance risks and the customer was and still is EPA, State, and local regulatory agencies. The strategy was command and control.

Today, that customer base has expanded to include the organization's "consumer and suppliers" that realized by being more sustainable, organizations can reduce environmental impact, conserve resources, garner goodwill, and enhance positive brand image.

After 23 years in the environmental, safety, and sustainability business, I see a fundamental shift from must do to satisfy the regulators to have to do to stay ahead of the competition in offering products and services that have green attributes.

As environmental and sustainable practitioners, we need to continue to manage compliance risk and embrace eco-business revenue and saving opportunities on behalf of the organization we represent.

green IT

In the course of my research in 2011, it became clearer than ever that information technology has a critical role to play in enabling more-sustainable practices in both public- and private-sector organizations while also improving their performance.

Only through the intelligent use of IT can organizations gain the visibility, analysis and control required to identify and minimize waste, achieve new efficiencies, simplify reporting, and reduce both operational and compliance risks.

Warren Wilson

Ovum
www.ovum.com

Sustainability-related challenges are becoming more severe, but growing numbers of case studies demonstrate that IT solutions can not only help organizations meet these challenges but also can boost their results – e.g. identifying and enabling new

efficiencies, reducing waste, reducing reliance on hazardous substances and scarce resources, improving customer satisfaction and investor loyalty, and more.

Ovum survey data shows that most companies have yet to adopt IT-based sustainability solutions, but those that do quickly achieve positive results and rapid return on investment. IT is the key – the challenges that organizations face are too numerous and data-intensive to manage successfully without judicious use of information technology.

In the spring of 2011, salesforce.com launched a pilot program with a select group of the company's top travelers. The goal of the program was to test-drive the application that allows participants to talk to their carbon footprint and measure the impact of their choices.

Using a carbon tracking application, engineered by CloudApps, the sustainability team empowered employees to have a dialog with their carbon footprint to learn about the impact of their current

Sue Amar

salesforce.com

www.salesforce.com

choices. Through this mobile app they were able to identify earth-friendly business travel alternatives, share their successes with their colleagues, compete for different incentives and help reduce the company's overall impact.

Through a gamification feature, the participants competed and collaborated with their colleagues to see who could improve his or her carbon footprint by the widest margin. What's more, the tool publicly rewarded employees for incremental milestone achievements – encouraging increased engagement and driving understanding even further.

The results were impressive. The 100 participants found they reduced carbon emissions associated with travel by an average of 9 percent.

For a company that holds dozens of conferences across six continents, reducing travel emissions is a huge opportunity. Encouraged by the results and positive employee engagement, salesforce.com plans roll the CloudApps SuMo mobile and desktop apps to all employees in 2012.

We have initiated a Green Data Center project at our Islandia, N.Y., facility. Originally built in 1991, our team identified the Islandia facility as one of our FY2011 projects for delivering on the CA Technologies corporate strategy of implementing best practices in data centers.

Cynthia Curtis

CA Technologies

www.ca.com

We assembled a team consisting of Facilities, IT, Business Users, Property Management, and CFD consultants. As a starting point, we installed CA ecoSoftware to measure the baseline power usage effectiveness (PUE) and to provide ongoing measurement, monitoring, and alerting at the device level.

We undertook various strategies to improve energy use and reduce Facilities and IT support costs of energy related concerns in the data center. The strategies included CFD analysis, improving air flow, using CRAC collars, utilizing hot/cold aisle design, raising the chiller temperature, and integrated alerting with feeds from network systems management tools.

We reduced energy use by 30 percent as shown in our efficiency metrics and overall consumption. The data center now has a balanced air and power environment, branch circuit monitoring and the ability to closely monitor and manage energy consumption and alert on power and environmental related risks using CA ecoMeter.

This monitoring and alerting has already proven effective and has helped reduce the risk of system outages on several occasions.

The ongoing benefit is \$196,000 in annual electricity cost savings and annualized savings of 800 tons of greenhouse gases.

We used this success as the basis to create the business case for expanded roll-out of Green Data Center projects at other facilities.

Sustainable hybrid meetings are a new configuration with an inherent ability to reduce your event's carbon footprint. The ability for participants to connect virtually without the high environmental cost of travel including air travel, ground transportation, accommodations, handouts and giveaways will be a vital aspect in the future of meetings.

Nancy Zavada

MeetGreen

www.meetgreen.com

Our team has been tracking measurable data in an effort to reinforce the importance of hybrid meetings in producing more environmentally responsible events. One client's conference earlier this year provided some of our first data points. Data analyzed for Cisco Live included a list of attendees both virtual and actual by

departing location, the average time spent online by virtual attendees, an average of 2.5 hotel room night stays and meeting space usage.

The report shows, the actual attendees produced 11,943 metric tons of carbon dioxide omissions by traveling to and attending the event. The virtual attendees potentially avoided 7,549 metric tons of carbon dioxide omissions by not physically attending (this figure factors in online computer electricity usage). A significant environmental savings is realized for just one of the thousands of meetings taking place daily.

In October 2010, Hitachi Data Systems introduced its Virtual Storage Platform enterprise data storage system. One of the key messages for this product was greater data center efficiency. A key component of efficiency is of course power and space consumption.

Mike Nalls

Hitachi Data Systems

www.hds.com

Our marketing for the product included both a comparison to our previous generation product and to the key competitors in the market. This comparison yielded a financial comparison which appealed to the cost of ownership sensitivity of our potential buyers.

These buyers were able to see their cost savings in advance of any purchase which was viewed quite differently than the traditional specification based product information where the buyer must figure out the economics on their own.

As a result, in a recent customer survey, we found 47 percent had selected their Hitachi Virtual Storage Platform over competing products because of lower cost of ownership and 38 percent selected it because of reduction in space and energy consumption.

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