The Green COO

The corporate response to the 'green' wave is growing to involve more executives. The COO is no exception, if not already involved; they need to begin acting now. One of the first tasks is to understand if they are a high risk or target for environmental activists or government regulation. Such 'targeting' can result from product, raw materials, material processing, transport or other real or perceived environmentally sensitive activity. Companies in that situation have to move quickly to identify where and in what ways they are most vulnerable or threatened to make sure they are in full compliance with regulations and best practices. They also must proactively act to protect their brand and corporate image with a program that presents their message. A PriceWaterhouseCoopers report describes what some company executives are thinking and doing to 'green' their companies. Their point is that many executives believe their companies must be proactive and do more to go 'green' and avoid damaging regulation and mandates.

Today, these responsibilities include monitoring, managing, innovating and implementing to meet both energy and environmental operational goals. Enterprise operations must be conducted with a sensitivity to and awareness of environmental impact and energy conservation or face the consequences. These consequences increasingly threaten to take the form of punitive actions whether from governmental, market or 'watchdog' groups. The operations team needs to understand capabilities that support efforts to reduce costs, increase conservation and minimize environmental impact. As mentioned in our column directed at the CIO, a partnership between COO and CIO teams can accelerate and make more effective an environmental program.

This paper discusses some areas to initiate and apply 'green' efforts. Before starting, it is critical to remember you need to know what is happening today in order to document and report progress. Knowing current costs, energy consumption, and environmental impact will allow you to identify and focus on the areas with the most opportunity for improvement. Before starting any program, be sure to educate yourself on the reality and potential, following fads, misleading simulations or politically-motivated dissimulation will benefit neither the company nor the environment.

Data and information is available from a wide variety of sources including vendors, suppliers and government agencies. The EPA provides free tools, advice and information.

Technology for export

Since IT was identified as a major energy consumer the data center and the CIO have been the focus of attention and 'green' efforts. The spotlight is shifting to operations and the COO. The COO should partner with the CIO to learn about the processes and technologies that have helped meet green objectives in the data center. The COO and CIO may have already cooperated in efforts over energy, HVAC, environmental management, etc. Much of that effort and expertise can be applied to the rest of the company. The COO team can work with the CIO to leverage available skills and tools as well as they draw on their experience at 'going green'. The COO

team brings their knowledge of operations and how it might use these technologies, processes and programs. Let's look at some of these.

Optimizing operations – reduce, reuse, recycle and redesign

Benchmark. You need to know the current status to identify opportunity and to measure progress against any goal. Focus on documenting current operations to identify 'low-hanging fruit' where opportunity exists. Track energy consumption and levels of utilization across existing assets and infrastructure to identify heavy users. Review processes, procedures and methods for unnecessary redundancy or operational inefficiency. Setting benchmark for current operations can use traditional Industrial Engineering methodology. In some cases, more sophisticated tracking tools may be needed such as these utility and energy management software programs for automated tracking and accounting. More tools are available from vendors as well as free calculators from the EPA. The EPA maintains multiple calculators to help identify energy and water consumption by banks/financial institutions, hospitals, offices, retail stores, warehouses, etc. They also have energy management guides for industries including petroleum refining, food processing, breweries, etc.

If you don't know what you are doing today and at what levels of operation, proving and demonstrating benefits of actions will be all but impossible. With governments, activist groups and the media focused on dramatic stories about business malfeasance, keep data and records to back up claims of environmental support.

Reduce. Look for ways to reduce energy consumption, eliminate inefficiencies, and lower the environmental impact and footprint of operations. This can be achieved by eliminating redundancy, by standardization of specifications, processes or procedures. It can take the form of redesign to layout or information flow to reduce complexity and wasted movement. It can take the form of using new operational methodologies and business process management to stream line and automate business operations to reduce energy consumption. In addition, looking at the existing plant infrastructure, make sure there are programs aimed at:

1. Managing the lifecycle of your assets, especially in tight and uncertain economic times there is a tendency to cling to outdated, environmentally inefficient equipment – be sure to work the numbers but frequently a total cost analysis will indicate the wises thing to do is to retire and refresh equipment in a timely manner.
2. Have an aggressive maintenance program to assure an on-going process to maintain your equipment for peak energy and operating efficiency.
3. Assuring new purchases are evaluated on the total costs including the environmental impact during manufacture and at end of life disposal and make energy efficiency a key criteria in purchase decisions when acquiring new assets.

For specific industries, vendors such as IBM have software that will help document and track energy consumption for a wide range of infrastructure including data centers, factories, buildings and truck operations. They collect data, analyze it and visualize the results to allow you to automatically monitor, track and control operations to minimize power consumption and maximize utilization. In the data center, virtualization and consolidation of workloads allow more efficient utilization and leveraging of existing equipment. The same concepts can be applied as appropriate in other parts of the organization. Consider consolidation and centralization of all enterprise facilities and factories – this provides more control over operations and properly done has the potential to minimize travel and commuting costs of employees.

Reduce the use and consumption of paper and paper products by switching to digital technologies. Switch newspaper, journals and magazines to digital versions. Consider the possibility of using digital signs, switching manuals, catalogs, instruction manuals and training materials to digital images. Institute a program to focus advertising and marketing campaigns and associated sales collateral to digital on-line media if possible. Reduce the number of attendees to and participation in trade shows and conferences by only allowing local employees to attend. Encourage organization and participation in on-line and web-based industry events and shows that do not require travel.

Product design and development departments should be looking for ways to design products to minimize waste and that can be built using more energy efficient manufacturing processes. Thought should be given to using materials that require less processing, are available locally, are renewable or do not require extensive pre-processing for use.

Reuse. Look for opportunities, to reuse assets and infrastructure. Avoiding a new purchase means that the energy and environmental impact of the entire resource supply chain is reduced dramatically Freed up resources can be reused and applied in other parts of the organization. The concept applies even to such areas as manufacturing waste – many enterprises have been successful in identifying ways to recycle materials from products that fail to pass inspection tests. Waste water is purified and recycled to be used to irrigate land or in cooling operations. The

Can you purchase used equipment? Nearly all major equipment vendors including IBM, CISCO, Dell, etc. have very large refurbishing operations. In addition, there are companies such as Network Hardware Resale and World Data Products which provide refurbished servers, network and storage devices at highly competitive prices with guarantees, support and delivery that rival vendor offerings.

Recycle. Look for opportunities where obsolete equipment can be refurbished and resold or donated for use. Rather than tossing equipment that has been depreciated investigate whether it can be refurbished and recycled for use by another part of the organization, a community group or institution. Reducing waste through process redesign or recycling also impacts all along the supply chain. It means lower consumption of raw materials and eliminates the energy consumption that would have taken place at each stage of a new product's life cycle from manufacturing to transportation and final discard.

Make it easy and convenient to recycle waste materials, water and used paper products. Promote redesign of products, processes and services to minimize waste and environmental impact. Promote initiatives that assure product handling and distribution through to end-of-life is done in an environmentally safe manner. For some products, this means providing instructions and facilities for their safe disposable when they are no longer useable. For other products, it can be a digital campaign to inform customers of the need to recycle and reuse products when they are through with them.

Reprocess. Business and IT processes have a way of being self-perpetuating, becoming more complex and redundant over time. Don't overlook the opportunity offered by reviewing, redesigning and streamlining processes both in their workflows and execution. IT vendors have developed a variety of tools and solutions for business process management for use outside the data center to automate and streamline process creation, evolution and implementation. New tools exist that will automatically discover and track dependencies and interactions to assure their proper execution, avoid problems and lower the costs of operations. Today's complex operations mean manual tracking of workflows is a near impossible task. Eliminating redundant tasks, automating policy application and sharing resources can provide major reductions in the manual as well as machine effort as well as the energy expended to accomplish a task.

However, in some environments the number of processes may not merit a technological approach but may still pose a threat to efficient and effective operations. Here are a few things that can be done with out acquiring or applying technology. Some simple efforts at process documentation and review can help advance a 'green' environment. Steps that can be taken include:
1. Document and centralize the recording of processes by business function
2. Review processes for currency and application – outdated processes hamper operations and cause inefficiency and waste
3. Rationalize processes to eliminate unnecessary steps, avoid redundant data collection or analysis and reduce complexity

Such manual review can pay big dividends by increasing awareness of opportunities and eliminating the waste and inefficiencies that aggregate over time.

Facilities Management – integrating energy management

Physical plant and operations represent major consumers of energy. Vendors such as IBM have services as well as programs that can identify thermal 'hot spots' which are the result of infrastructure layout and/or operational flow design. Here the partnership with IT should really pay-off. A fully integrated program would include distributing sensors and implementing management programs to centrally control and remotely manage lighting, heating, ventilation and air conditioning. Remote management and control can provide the operations team the data they need to understand where lighting, cooling or heating efforts are sub-optimal or being wasted e.g. keeping lights on in empty offices or over-cooling empty space. The implementation doesn't have to fully computerized and automated. Motion sensitive switches and timers on lights in low traffic rooms or areas have been available and used for years. Identify which operations are the biggest consumers of power, generate the most heat or are operating at low levels of efficiency. That is where to focus initial efforts to implement green initiatives. Look at all scarce resources including space, water, energy supplies, etc.

If a new facility is being built or refurbished, there are more and more architectural firms that specialize in designing or refurbishing existing plant into energy efficient, low impact 'green' buildings. Recycling existing real estate can provide substantial savings over a grounds-up new building. However, business accountability and prudence does dictate that a careful and accurate cost-analysis be done when deciding to refurbish an existing building as well as designing a new building using 'green' techniques and technologies.

Consideration should be given to using non-traditional alternatives for generating, saving and conserving energy. It will be decades if not longer before oil and gas are not the primary and most cost effective sources of energy. However, some alternatives can be used as supplementary sources, especially in areas with abundant sunshine or easily accessible geothermal sources of energy. Progress has also been made in strategically designed energy sinks that can store energy during the day to be used as supplemental off-hour supplies.

In using any new technology or alternative energy source, a cost-benefit analysis is necessary. Be sure to use accurate and not wildly optimistic pricing and cost estimations. Prices and costs of any commodity and raw material can change. The laws of economics will hold and artificially high prices will fall as demand shifts and cheaper substitutes emerge. Don't make the mistake of over-investing in a technology or process whose payback period exceeds its useful life. However, do position yourself and keep watch to assure that you take advantage of any and all federal and state government and vendor subsidies and programs that will reward you for taking actions directed at improving energy and environmental efficiencies.

In conclusion

Today the role of the COO has expanded to include the responsibility to assure work is done in an environmentally efficient and effective manner. By working closely with the CIO, he can assure that the goals of the Corporate Sustainability plan and environmental initiatives merge into and support productive operations. He can organize his team to creatively apply new and emerging processes and methodologies to achieve enterprise green goals. He plays a pivotal role in assuring operations from raw material acquisition through product design, manufacture, distribution and end-of-life is done in an environmentally safe and sustainable manner. Remember, the effort is not just for today but has to have benefits for the long-haul.