Green Innovation: Do You Have a G-Rated Business™?

Innovationedge
Neenah, Wisconsin

The many pressures for businesses and products to become green offer numerous opportunities for true innovation, not just in products and services but in entire business models and in the web of relationships (the "value network") around a business. But in spite of the rich opportunities for innovation, many companies boast of being green after doing little more than adding a little recycled material to a product or package, or adding some "earth friendly" furniture to their offices.

How can a business pursue the changes and innovations needed to become really green? And what does it mean to be green?

Let's discuss what green is, and then we'll address approaches to green innovation.

G-Rated Business™

We recommend that companies think about green issues and sustainability in terms of becoming a "G-Rated Business™."[1] This concept from **Innovation**edge draws upon an analogy to movie ratings. For a movie to be G-rated, it needs to be free of gratuitous sex, violence, and profanity. A two-hour movie with 119-minutes of mild content can lose its G-rating for just a few seconds of material. It's not enough to avoid graphic violence of nudity for 99% of the movie – it generally needs to be clean throughout. While we recognize that there are abundant imperfections in movie ratings, we expect a movie to be substantially free of certain content for the entire movie, not just most of it, to be G-Rated. Now if we let "G" stand for "green", what is a "G-Rated Business™"? It's one that seeks to be green throughout its operations, consistently, not just in selected scenes. It is one with sustainability integrated into its operations and business model at many levels.

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[1] G-Rated Business™ is a term proprietary to **Innovation**edge. Related proprietary terms describing our approach to sustainability and green issues include G-Rated Biz™, G-Values™, Green Business Solution™, G-Value Network™, G-Value Net™, Sustaining-G™, G-Network™, and Econo-G™.

The "G-Rating" system we advocate, soon to be published more fully on our G-Rating.org Website (under development, along with several other related sites owned by **Innovation**edge), recognizes that each business has different needs and pressures in terms of energy use, carbon footprint, raw materials demands, economic pressures, regulatory burdens, consumer expectations, etc. Within these unique frameworks, companies can explore options and determine at a deep level what green should mean. A company can then compare its actions and policies to best practices for related industries, to general principles, to recommended guidelines from experts, and to consumer expectations, and rate itself in multiple categories for its greenness. These multiple ratings can then be weighted and combined to obtain a numerical G-Rating. For example, to be G-Rated, the business should be making serious efforts to understand environmental impact and green opportunities in areas such as:

- Raw material sourcing (artificial versus natural, recycled content, impact of materials production and acquisition, energy demand in production and transportation, etc.)
- Safety factors associated with raw materials production and transportation
- Manufacturing methods (power demand, resource consumption, impact on water supplies, impact on atmosphere, carbon footprint, impact of alternative methods, impact on labor force and communities)
- Vendors and partners: environmental impact of their operations and your partnership with them, partnering for green initiatives, collaboration to find green innovations, reputation, concerns.
- Pollution issues (water supply, air, waste streams, "hidden" pollutants, etc.)
- Packaging and marketing impacts (waste streams, energy use, recyclability)
- Office and factory impact (lighting systems, building design, air conditioning and heating, building construction, materials use, land use issues, impact on ecosystem, impact on traffic, community impact, waste streams, recycling practices, etc.)
- Employee training, participation in green initiatives
- Community involvement and education
- Recyclability and disposal of products
- Impact of consumer service and related aftermarket programs.

This approach is meant to be holistic, not superficial, and certainly not "greenwashing." To be holistic, the broad impact of decisions and actions must be considered. Narrow, superficial thinking can sometimes lead a company to think it is green when it is anything but. For example, one major airline instituted a recycling policy. They became fervently "green" in seeking to recycle aluminum cans. Unfortunately, some airports they landed at did not yet have suitable recycling facilities to receive and recycle the cans used during the flight. So instead of throwing the cans away, as was their old practice, the cans would be recycled by flying them back to the airline's hub city where they could then be recycled properly. But the cost of flying used aluminum cans hundreds of miles was far more than the value of the aluminum being recycled. When the extra jet fuel to fly the empty cans hundreds of miles was taken into account, it was clear that it was environmentally and economically irresponsible to recycle them in that matter. A greener

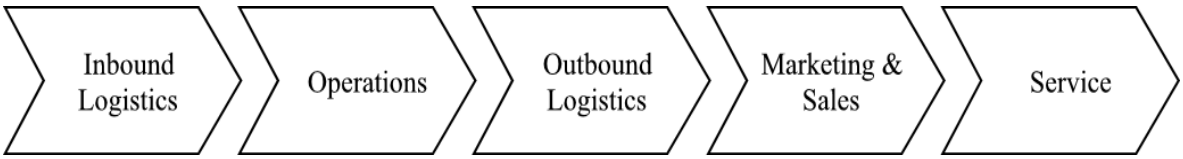
solution would have been to simply landfill the cans after each flight when recycling was not possible. Similar considerations may come into play with some curbside recycling efforts. In some communities, large diesel trucks roam through the streets to pick up small batches of empty tin cans and glass jars in recycling bins in front of people's homes. When the cost of fuel, labor, and other resources to recycle the cans is considered, it may often be several times the actual value of the recycled material. If we generate large amounts of diesel fumes and greenhouses gases to recycle a few tin cans, are we really being more earth friendly than if we had simply landfilled them? Maybe, maybe not - the point is that the cost/benefit analysis based on the whole system is rarely done. People focus on one element: do we recycle cans (good) or landfill them (bad), without considering what the real tradeoffs are. A holistic approach considers these broader factors and ensures that efforts to be green are green indeed, not just "feel good" greenwashing. And in the context of a total "Green Business Solution™," we believe that going green is not a step toward going broke, but can deliver positive economic results and competitive advantages, while also having a beneficial impact on the community and the environment. With a holistic approach coupled with a strong approach to innovation, becoming a G-Rated Business™ can be win/win at its best.

We emphasize that a holistic approach to sustainability is needed, one that also turns to partners and allies at multiple levels to find the innovative approaches needed for success.

A business can understand it's "G-Rating" by surveying not just its products or manufacturing methods, not just its buildings and facilities, but by surveying its entire ecosystem – the value network of partners, allies, and customers linked in interdependent relationships that influence one another. And a company seeking to build a truly G-Rated Business™ must work across its entire value network to find opportunities, problems, and solutions.

Understanding the G-Value Network™

In 1985, Michael Porter published a ground-breaking book, *Competitive Advantage*, that summarized many years of his experience with business.[2] This book popularized the concept of the value chain, in which various processes occur along the path from raw materials to finished product and after-market service.



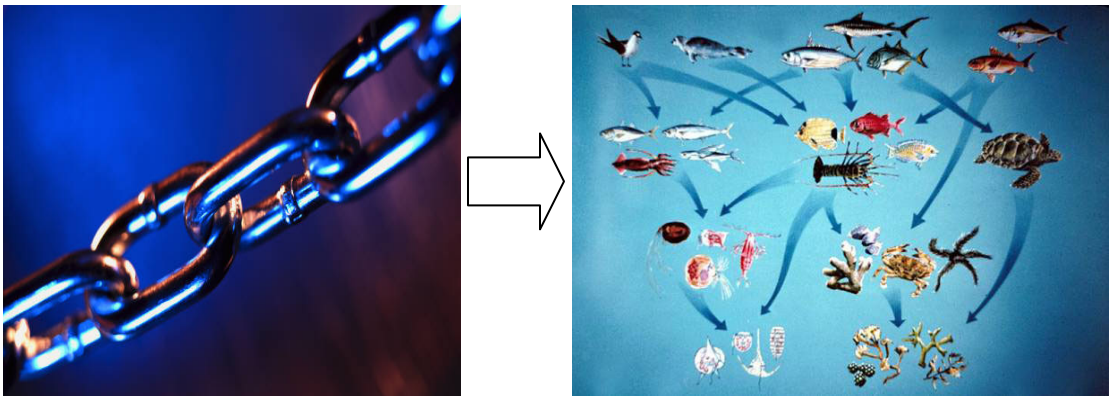
Example of a value chain.

A chain of processes was a useful metaphor for describing many business activities in that day, and is still useful in describing traditional manufacturing. But the flavor of business in the decades before 1985 was heavily influenced by the assembly line and other linear production systems, for which a chain was a good metaphor. Since that era, we have increasingly moved from an industrial economy to a knowledge economy, in

[2] Michael Porter, *Competitive Advantage*, New York: Free Press, 1985.

which many businesses create value not through linear operations along a chain, but through non-linear systems of complex relationships. These systems look more like living systems, like ecosystems, with their complex feedback loops and interdependencies. This is a remarkably appropriate paradigm for understanding how to become truly "G-Rated."

A key characteristic of a business ecosystem is that the interactions between the different players involve more than just transactions of tangible such as materials, products, and money, but also involve extensive exchanges of intangibles. In the knowledge economy, exchanges of intangibles such as knowledge, trust, loyalty, advice, insights, know-how, etc., are vital to the value creation processes of a business. And for a company seeking to become G-Rated, these intangible can include knowledge sharing, feedback, and collaboration on multiple green fronts to be truly sustainable.



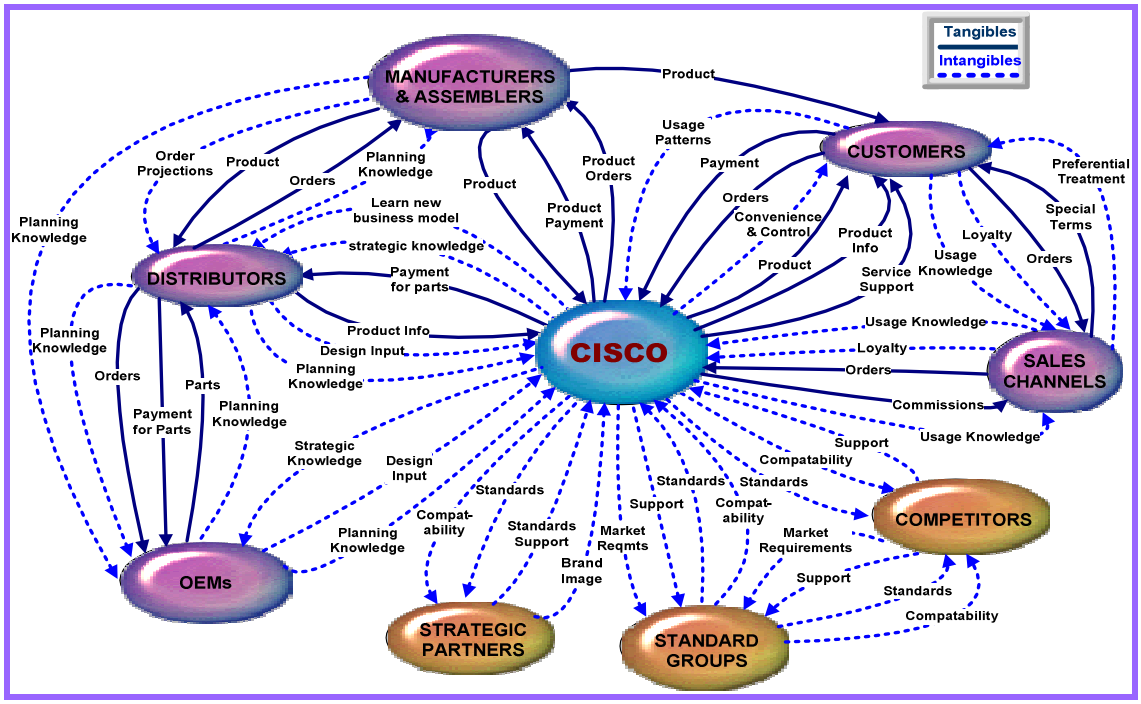
The trend: From value chains to value creation in complex ecosystems. [3]

How can the value network of a business be understood and adapted to create a holistic green approach – or a total Green Business Solution™? We have found a powerful tool for this purpose is Value Network Analysis. Introduced in Verna Allee's groundbreaking book, *The Future of Knowledge*[4], and later described in detail in a variety of white papers and case studies prepared by Verna Allee and her consortium of partners[5], Value Network Analysis (VNA) is a cutting edge tool for understanding how organizations function and how they can be improved. In our experience, VNA allows companies to visualize and evaluate the dominating influence of unseen intangible exchanges across the ecosystem. These transactions can shape and control behaviors in ways that may differ sharply from what one would expect from examining a value chain, a balance sheet, or other mapping methods or tools focused on tangibles.

One of the important tools in this approach is the use of the "holomap" for mapping the nodes in a network or ecosystem, and identifying the intangible transactions as well as tangible transactions that occur. An example of a holomap is shown below, based on analysis of Cisco's external ecosystem.[6] In the map, intangible transactions are as dotted

[3] (Ecosystem art from Natl. Oceanic and Atmospheric Admin., http://celebrating200years.noaa.gov/.
[4] *Ibid.*
[5] See http://value-networks.com.
[6] Verna Allee, 2003, pp. 213-214.

lines and tangibles as solid. A surprising feature of Cisco's ecosystem is the rich network of intangibles such as shared information on business plans, criteria, etc., that connected it even to its partners in a collaborative model. This approach made it easier for useful standards to be implemented that would strengthen Cisco's ability to operate. Other intangibles with other partners also strengthened its position in the marketplace. It is the web of intangibles that tells the most important story behind Cisco's meteoric rise in the early days of the Internet, and this network continues to be a major source of value creation today.



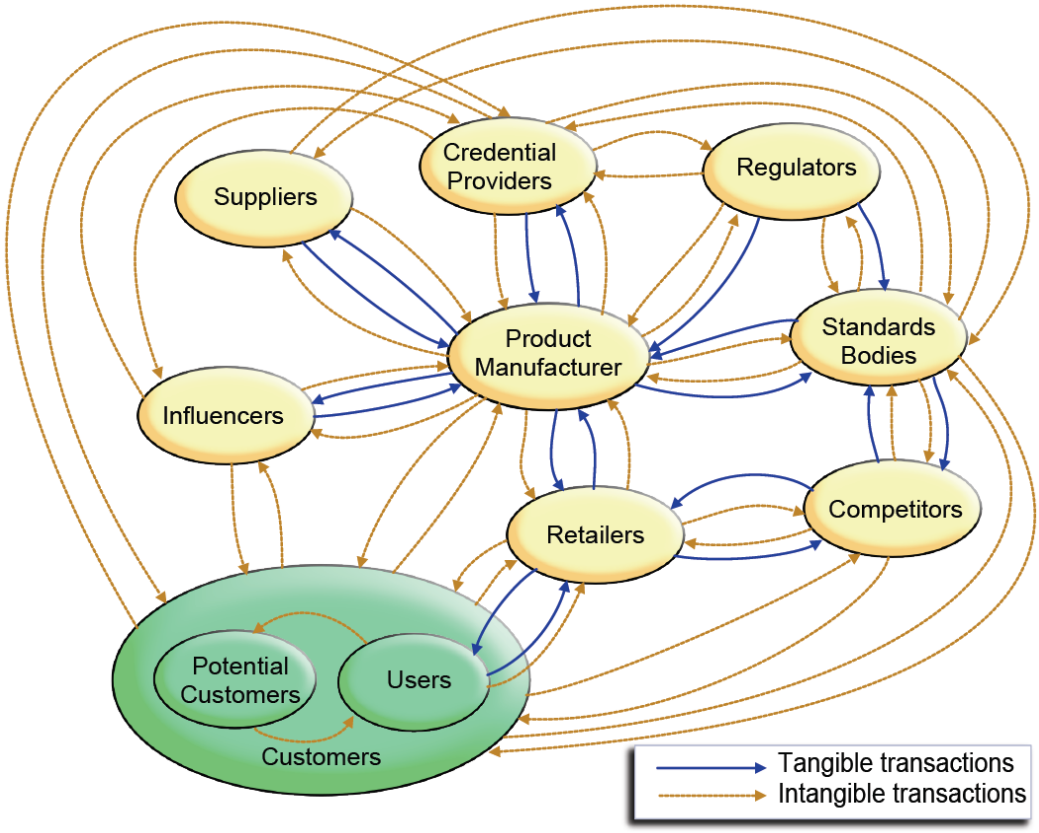
Holomap of Cisco's ecosystem. From Verna Allee, *Future of Knowledge* (2003), p. 214.

Similar principles apply to building G-Value Networks aimed at helping achieve higher G-Ratings for business. As in the Cisco example, open collaboration with competitors can become a vital part of the business model, and a source of truly green innovation. When it comes to being green, it's possible to seek competitive advantage for a business while also collaborating with competitors, consumers, regulators, and others to forge win/win paradigms.

Details of the Value Network methodology used by Innovationedge are described in another white paper, "Building a Successful Ecosystem: Value Network Tools at Innovationedge" by Jeff Lindsay and Cheryl Perkins, available at www.innovationedge.com. The approach includes creating "holomaps" similar to the Cisco map above, in which nodes describing human roles are linked by combinations of tangible and intangible exchanges, each of which can be analyzed for its impact on others and for its role in value creation. Much can be learned about the behavior of an ecosystem by the overarching structure of the map – the connectivity between groups, the balance of tangibles and intangibles, the existence of nodes that control too much or

nodes that are too isolated, and other gaps and problems based on experience in interpreting holomaps and organizational health.

A generic example of holomap by **Innovation**edge is shown below. This map depicts one view of an external ecosystem around a product manufacturer making a consumer product. The map is shown with only a few representative transactions without detailed labeling. The tangible transactions in blue can be cash or other payments, products, delivered advertising, regulatory requirements, documents provided under contract, etc. The intangibles may be, for example, trust, loyalty, shared information about product plans, consumer insights, manufacturing needs, safety information, advice, feedback, requests for assistance, etc. And many of these transactions can be significant in analyzing the G-Rating of an ecosystem.



Sample holomap for a consumer products company showing tangible and intangible transactions (unlabeled for simplicity).

Analysis of the ecosystem in light of environmental and other green factors can identify gaps and opportunities toward a higher G-Rating. Indeed, building connections between the nodes of the ecosystem that support green initiatives is an important activity that can follow the mapping exercise. And these connections can be used to generate the next level of innovation for a company that deliver a genuine Green Business Solution™ through G-Rated innovation.

Green Innovation: An Ecosystem Approach

The world is increasingly recognizing the importance of open innovation rather than closed innovation. No one company has access to enough intelligence to create all the innovation it needs. Those on the cutting edge are increasingly reaching out to others – universities, vendors, allies and partners, customers, consumers, etc. – to find the ideas and innovations needed for success. At **Innovation**edge, we are recognized as thought leaders in open innovation, with Founder and President Cheryl Perkins being the chair of the world's leading annual conference on open innovation, CoDev (e.g., CoDev 2008, CoDev 2009, etc., sponsored by the Management Roundtable). And open innovation is essential to find a truly Green Business Solution™.

Green open innovation begins with turning to the various players in one's value network to identify opportunities for a holistic green approach. This is similar to what Wal-Mart is doing with its partners. With slightly different terminology, Wal-Mart speaks of a series of fourteen "Strategic Value Networks" to support its green initiatives through enhanced relationships with numerous members of its ecosystem.[7] These strategic value networks include a wide variety of partners, customers, university personnel, experts, and outside thought leaders for each of the designated areas. These areas include logistics, packaging, greenhouse has strategy, alternative fuels, construction and maintenance, seafood, electronics, food and agriculture, forest and paper products, jewelry, China, textiles, and chemical intensive products. Wal-Mart turns to these groups for collaborative innovation in achieving green objectives. It's an approach that can be strengthened in several ways, but represents an outstanding effort and one that has the virtue of offering a broad perspective, reaching out to its ecosystems, and seeking innovation and progress through collaboration.

Wal-Mart's approach has resulted in many advances in creating sustainable product offerings, often leveraging its influence in the business ecosystem to drive significant change toward sustainable practices by its vendors and partners. Wal-Mart obtains information, guidance, and advice from the members of the value networks, and in return, network participants gain information about Wal-Mart's operations and even have a say in some decisions. Andrew Ruben, Wal-Mart's vice president of corporate strategy and business sustainability, directed Wal-Mart's network leaders to "derive economic benefits from improved environmental and social outcomes."[8] As laudable as the environmental goals of Wal-Mart are, it is still a business, and their initiatives must make economic sense. As Ruben said, "It's not philanthropy.".

Similar approaches, often on a much smaller scale, can make sense for many businesses. Again, we maintain that a proper holistic approach truly can help a business become more green without committing economic suicide. In fact, significant economic gain can often be achieved – if a wise holistic approach with abundant innovation is pursued.

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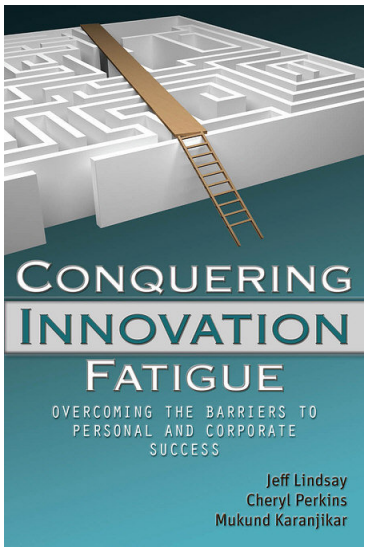
[7] Erica L. Plambeck and Lyn Denend, "The Greening of Wal-Mart," *Stanford Social Innovation Review*, Spring 2008, available online at http://www.value-networks.com/Articles/Wal-Mart%20Value%20Networks.pdf, as viewed June 12, 2008.
[8] Ibid.

Case Study: Competitive Advantage through Holistic Green Innovation at Orion Energy Systems



(Excerpt from the recently published book, *Conquering Innovation Fatigue* by Jeff Lindsay, Cheryl Perkins, and Mukund Karanjikar, published by John Wiley & Sons, 2009.)

Bemis Manufacturing in Sheboygan Falls, Wisconsin is the largest toilet seat manufacturer in the world. After meeting with Neal Verfuerth, President of Orion Energy Systems in Sheboygan, Wisconsin, Bemis Manufacturing agreed on an unusual project. Industry standard high intensity discharge lighting would be ripped out and Orion's new proprietary system would be installed to provide the plant with better, brighter lighting for this early adopter. When the project was finished and the new lighting system was in place, hundreds of employees began enjoying brighter, more comfortable lighting. But there is much more to this story. Over at the local utility company, alarms were being triggered. Operators were shocked. Eight percent of the entire power load for the city of Sheboygan Falls (population 6800) had been taken out overnight. Pinpointing the source of the change, the meters showed that Bemis Manufacturing suddenly was using 50% less energy. They knew the plant wasn't closed, that it was busy and business was good. So the dramatic drop in power consumption pointed to one troubling possibility: someone was stealing electricity. Was there a thief working for Bemis?

Since that day, Bemis Manufacturing has been saving hundreds of thousands of dollars in electrical bills each year not because of thievery, but because of dramatic innovations in lighting systems from Orion Energy Systems. In spite of huge cuts in power for lighting, the plant truly is a brighter, better place to work.

Neal Verfuerth is a true leader of innovation who is combining the best of environmental stewardship and capitalism to achieve solutions once thought impossible. Can a building be made brighter while using half as much electricity? Can massive amounts of electrical power be added to a grid during times of peak demands without having to build a new power plant? Can environmental demands for reduced energy use be achieved in ways that help businesses and utilities? Can improved technology replace antiquated lighting systems without creating any waste? In Neal's world, the world of Orion Energy Systems, the answers are all "yes!" These answers have come through in-depth innovation at almost every aspect of the fluorescent lighting value network.

Orion Energy Systems is a rapidly growing powerhouse of innovation that provides fluorescent lighting systems that use far less power than traditional fluorescent lighting, and offer higher efficiency than the highly acclaimed LED lights that are often viewed as

the standard for energy efficient lighting. Orion makes it possible to be ever greener than LEDs and more cost effective, without the trouble of having to rewire a building. Plants that previously installed high-pressure sodium, high-intensity discharge or metal halide lamps to achieve energy savings (often at the cost of employees unhappy with the color or noise) are now finding much more significant energy savings with more pleasant lighting and longer life after switching to Orion's systems. Customers like the *Milwaukee Journal Sentinel* newspaper, who replaced their high-intensity discharge system with Orion's systems are achieving a return on their investment in about one year.[9]

Based on years of experience across the full scope of the lighting business, Neal has identified numerous gaps in prior lighting systems and has found solutions for these gaps. For example, the reflectors behind fluorescent lights are far more important than manufacturers realized in the past. The details of the reflector shape control how effectively light is distributed below. By properly and uniformly distributing light, work areas can be made brighter with less power. For high bay with a 50-foot ceiling, the ideal reflector may be a deep, narrow valley, but for a ceiling 12-feet high, a broader curved profile, complete with a novel dimple in the middle, gives the broad stream of light needed. Both need to be made from the right metal, a special aluminum alloy that gives outstanding heat distribution for the longevity of the ballast and extremely high reflectivity. To make the low-bay shape just right, given the demands of the alloy and some of the subtle requirements for the product to provide ease of installation and other benefits, Neal found that existing equipment was too slow and problematic. To fill in that gap in his supply chain, Neal and his team actually invented a unique machine, one of a kind in the world, using components from a Canadian provider to create a lengthy series of special rollers that turn a flat alloy panel into a beautifully curved reflector panel.

Neal also found that the design of popular high-intensity discharge systems resulted in half the energy being wasted as heat and vibration. By separating the ballast (the component that regulates energy flow) from the lamp and using a highly-conductive aluminum alloy frame to cool the lamp, he could use much less energy and increase the ballast life. The performance of his high intensity fluorescent system is truly surprising: more light with half the energy. So surprising that many prospective clients simply refused to believe it. But Neal did not let skepticism and the difficulty of making sales slow him down. He saw a need for further innovation to provide a compelling reason to believe, to help clients immediately quantify the energy savings they were obtaining. Thus Neal invented and patented a meter that is installed with the lights which documents energy savings and helps clients see the dollars being saved. It was a technological invention, to be sure, but one aimed at supporting a business model. In a sense, his patent on meters can be viewed as a "business method patent" broadly defined, or a patent crafted to support an innovation in how one does business.

This innovation in business methods went even further. Clients still refused to believe that such significant savings were possible - after all, how could the massive electrical lighting industry have missed this opportunity after all these years? Undaunted, Neal

[9] Paul Studeebaker, "Back to the Future: Facilities Engineers Say They Enjoy Upgrading to New-Generation Fluorescent Lighting," *Plant Services*, Feb. 2005.

added a further business method innovation. He would install the new lighting system for free, accepting payments based on the savings he was delivering in the clients' lighting bills. When the contract expired, clients would own the lights. But Neal had to do 18 months of homework to ensure that this approach would not need to be mentioned in SEC filings of his clients.[10] There were challenges at every turn, but through added innovation, persistence, and homework, Neal pressed forward, refusing to give in to the many innovation fatigue factors in his way.

The manufacturing process includes innovations in many areas. Neal has found that the painting of ballast boxes plays an important role in their performance. To get the painting right, Neal found it best to install his own advanced electrostatic powder coating system. The energy required comes from a highly efficient microturbine generator from Capstone Turbine, and the thermal energy in the hot gases from the process are recovered to help in the drying of the paint.

Part of Orion's suite of solutions includes light pipes that, characteristically, offer numerous innovations in design that give them an edge over traditional skylights. Further benefits come from Orion's wireless control systems that provide a desired level of lighting automatically by sensing the light from the light pipes and turning off unneeded banks of fluorescent lights. One of the patents protecting that system is a great example of a "business method patent" that combines technology with innovative business method thinking. The company also offers a unique business model called the Virtual Power Plant, a true model for green innovation that we'll discuss later.

Orion Energy Systems has pursued an aggressive course in creating intellectual assets to protect their competitive advantage. Part of their effort includes seeking "business method patents" that go far beyond the ordinary scope of patents on products and manufacturing methods. For example, their Virtual Power Plant business model brings together multiple participating companies to respond to surging power demand by cutting back on lighting, using automated management systems from Orion with communication across the Internet. They can then collectively sell the saved power to a broker for a profit. In this system, the financial rewards of returning brokered quantities of power are shared among the participants. Orion's remote control systems and other tools come into play in this business model. And a "business method" patent application, prepared with the help of one of the nation's leading IP firms, is part of Orion's portfolio.[11]

Thinking outside the box in terms of business models and means for protecting them is key to Orion's strategy. They offer far more than just great energy-saving technology. They offer new methods of doing business – a truly holistic approach to green business.

Part of Orion's leadership in business models was expressed in their efforts to help Wisconsin benefit from carbon credits associated with the use of nuclear power. When

[10] Arlene Weintraub and Michael Arndt, "A Bright Idea," *BusinessWeek SmallBiz*, Spring 2005.
[11] Business method patents are a particular complex and challenging aspect of US patent law, but represent an opportunity that should not be ignored when appropriate. Business method patents are an area that **Innovation**edge has had significant experience in pursuing.

Wisconsin was selling the management of its nuclear power plants to a third party, Neal recognized that the carbon credit benefits from Wisconsin's nuclear power plants should be treated as a valuable future asset that should be retained by the state. Without his intervention, Wisconsin would have lost the value of those carbon credits. Early recognition of their future value allowed Neal to save millions for the State of Wisconsin, though it took significant efforts on his part to make it happen. It's just one more example of the innovations in business models that Neal brings to the table - a table sometimes freely shared with many in his broad approach to finding green solutions.

Orion has been at the cutting edge of new business models for managing emissions and carbon credits. Naturally, energy-efficient lighting is a very smart way to cut back on fossil fuel consumption. "We've been working on the notion of monetizing emissions through efficiency for three years," Neal told us in early 2008. They monetized their first emissions trade during the summer of 2007. They recently did a project for a non-profit with a charter of retiring carbon, working with an industrial facility to reduce emissions. And Vice President Steve Heins explains that Orion's membership in the Chicago Climate Exchange and Environmental Markets Association helps keep them involved in the growing markets for emission reduction credits. Neal and Steve believe that once the door opens on market trades based on energy efficiency, there will be a transformation in our sense of how much it will cost to reduce emissions. Sensible, economic approaches to energy conservation can be achieved when the right innovations are in place. Neal said, "We're going to take energy efficiency and change it from being a social program to one that makes economic sense."

Orion even started a non-profit foundation called E4, whose charter is to bridge the gap between environmentalism and capitalism. With the help of E4, the State of Wisconsin was able to recognize the future importance of emission credits when they structured a deal between Florida Power and Light and WE Energies of Wisconsin, in which Wisconsin's Point Beach Nuclear Power Plant was sold. The original deal would have overlooked the value of emission credits entirely, but thanks to the efforts of E4, that value will be retained for the taxpayers of Wisconsin. WE Energy kept the rights to possible emission credits from the plant, preserving a benefit that may be worth up to $200 million a year.

As Orion works to provide the benefits of future emissions credits to their customers as well, they face major opportunities based on entirely new business models, models that the current market is not likely to appreciate for some time. But Orion and their partners will be devising new ways of looking at how energy is used, how energy is procured, and even how energy issues are legislated, according to Neal and Steve.

Steve Heins explains that "instead of 'greenwashing,' we are taking something that is measurable and verifiable, and ensuring that our customers get credit for what they are doing for their communities. In fact, our customers already have received more than 400 environmental stewardship awards."

Neal had more to say about this vision: "I've testified at the State Senate and Assembly. Everyone wants to beat their chest about energy issues, but not many are standing up to say 'I have a solution, it's cost-effective, here's how it will be paid for, and here are the benefits.' We can do that, and offer trickle-down economic effects and help for the environment."

That's what innovation is all about: real solutions to real problems that make life better for real people.

The vision behind all these efforts at innovation: "Energy savings without compromise." Neal points out that people go back to what works. "If an alleged energy-savings approach solution makes a facility darker and less productive, people won't stay with it. People want more for less. That's our heritage. That's how we innovate."

Summary

At **Innovation**edge, we work with clients to help them take a holistic approach to green innovation, following best practices and bold innovation concepts like those from Orion Energy Systems and other champions of successful green business solutions. With an approach that is tailored for each client, we help our clients understand their ecosystem and help them explore alternatives that can drive major innovations and deliver significant economic benefits in the quest to be green. We help them understand how open innovation and collaborative paradigms can result in advances far beyond what "do it alone" closed innovation can deliver. We help them create a green roadmap for the future, and work with our partners to adapt a broad G-Rated Business approach to their needs. We help them through benchmarking, new collaborations, and targeted innovation to create high G-Ratings that deliver environmental and economic benefits for their G-Rated Business™.

Appendix: Supplemental Information

Definition of "Green"

Many companies use a variety of phrases and interpretation of environmental issues.
A general consumer ***trend*** is evolving toward "sustainability" aka "green" which may include a combination of:

- Product itself is environmentally friendly (chemicals) and/or non-toxic.
- Disposal and re-use of packaging and containers.
- Manufacturing in environmentally friendly manner.
- Shipping and distribution in ways that minimize environmental impact.

"Sustainable" in its environmental sense, according to Wikipedia, "refers to the potential longevity of vital human ecological support systems, such as the planet's climatic system, systems of agriculture, industry, forestry, and fisheries, and human communities in general and the various systems on which they depend."[12] In consumer terms, "sustainable" refers to something that does not harm the environment or people.

"Organic" generally refers to matter that has come from a recently living organism or is composed of organic compounds. In more common terms, "organic" refers to a form of agriculture which excludes the use of synthetic fertilizers and pesticides, plant growth regulators, livestock feed additives, and genetically modified organisms.[13]

Groups defining "Sustainability"

- *The Leadership in Energy and Environmental Design (LEED)*

Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.

http://www.usgbc.org

[12] "Sutainability," Wikipedia, http://en.wikipedia.org/wiki/Sustainability, as viewed July 23, 2008.
[13] See "Organic Matter" and "Organic Farming" at Wikipedia, http://en.wikipedia.org/wiki/Organic_material and http://en.wikipedia.org/wiki/Organic_farming, respectively, as viewed July 23, 2008.

- *Green Seal*

Provides science-based environmental certification standards that are credible, transparent, and essential in an increasingly educated and competitive marketplace. Industry knowledge and standards help manufacturers, purchasers, and end users alike make responsible choices that positively impact business behavior and improve quality of life.

Green Seal meets the criteria of ISO 14020 and 14024, the standards for ecolabeling set by the International Organization for Standardization (ISO); the U.S. Environmental Protection Agency's criteria for third-party certifiers of environmentally preferable products; and the criteria for bona fide ecolabeling bodies of the Global Ecolabeling Network.

http://www.greenseal.org

- *U.S. Environmental Protection Agency*

EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Where national standards are not met, EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

http://www.epa.gov/epahome/industry.htm