AN ALTERNATIVE ENVIRONMENTAL STRATEGY

Is Government Inundating Industry with Overly Ambitious Environmental Requirements?

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The Department of Defense (DoD) is placing an increasing emphasis on environmental issues. To date, environmental planners have focused on cleanup and regulatory compliance. As a result, the principal players were the regulatory agencies, the legal profession and civil engineers. By comparison, the pollution prevention side of the environmental problem was largely ignored. In the area of pollution prevention, the acquisition process presents the best opportunity to mitigate, or even eliminate, future environmental problems.

We should not, however, suddenly abandon cleanup initiatives only to inundate the acquisition process with overly ambitious environmental requirements. The strategy we need is an integrated environmental strategy that looks collectively at all of our acquisition, operations and maintenance functions. The best approach recognizes that there must be trade-offs. In an era of decreasing defense budgets, we can ill afford non-value added environmental programs. With force readiness emerging as a very sensitive issue, we need to reassess our environmental objectives in terms of cost, performance and compliance. Funding environmental projects should *not* come at the expense of national security.

Consequently, we must pursue a *"win-win"* environmental strategy — one that is both good for defense and good for the environment. A coherent environmental strategy can lead to more efficient processes, improvements in productivity, less waste, and lower compliance costs. The trick is to find alternate ways to get the job done that make environmental as well as business sense. In many operations, areas overlap between the goals of the organization and the environmental movement. Management should concentrate its attention and limited resources in these common areas.

Environmental Compliance

In the face of new environmental legislation, managers frequently take the expedient short-sighted approach. They focus on the borderline of regulatory compliance/noncompliance. At best, they will treat environmental factors as "add-on's" to their normal operations. At worst, they will cynically view environmental protection as just one more expensive and unavoidable bureaucratic obstacle. Few organizations have an environmental

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strategy that addresses their day-to-day operations as well as their long-term objectives.

The environmental movement will never take hold unless two basic changes occur. First, management must come to view environmental initiatives as complementary, not contradictory, to organizational goals. The second change applies to state and federal regulatory agencies. They must thoroughly understand that we are in an era of increasing domestic and international competition. Neither industry nor the DoD has idle resources to fund increasingly restrictive environmental requirements.

Legislators must evaluate the need for more complex and stringent environmental regulation. As a minimum, they should standardize often conflicting requirements at the state and federal levels. From the acquisition perspective, there must be a balance between desirable and acceptable environmental requirements. In the acquisition field, we recognize the nonlinear relationship among cost, schedule and performance. Increasing the speed or reducing the weight specifications of a weapon system by 10 percent may be desirable; however, this may mean a 50-percent slippage in the schedule or a 100-percent increase in the cost. The same analogy applies to environmental requirements. With overly stringent environmental specifications, compliance will take longer and be more expensive.

Similarities with Quality

The environmental debate has striking similarities to the quality revolution. Although quality was initially given a lukewarm reception by business, it eventually became the formula for success. Similar results are possible if both industry and government adopt sensible environmental practices.

In the pursuit of quality, business made basic changes in strategic planning and day-to-day operations. A "quality-first" philosophy is no longer seen as an additional cost, but rather as a competitive advantage. If we can view pollution prevention and waste reduction as an untapped opportunity, the same result is possible in defense acquisition.

As with poor quality, pollution is an indicator of inefficiency because waste reflects materials not used in the production process. Pursuing a strategy of pollution prevention in the weapon systems acquisition process allows the defense industry to more efficiently produce products. Therefore, this approach makes economic as well as environmental sense.

Environmental Goals vs. Real-world Constraints

Today, many environmental initiatives run counter not only to business and defense interests, but also to environmental goals. Many of the proposed solutions impair progress, waste resources, and do little to solve real environmental problems.

Before the acquisition community can fully embrace the environmental movement, all parties must acknowledge that idealistic environmental goals, no matter how well-intentioned, must be tempered with real-world constraints. These include—

- performance;
- safety;
- cost;
- limited resources;
- technical limitations; and
- global competitiveness.

FIGURE 1. Management Questions for Policy Formulation

1. Are the underlying assumptions correct?
2. This is a problem in relation to what?
3. What is 100 percent, and what is the percent we are concentrating on?
4. What is the trend: both short-term and long-term?
5. What is the real objective, and are we working to that end?
6. Is the proposed solution worse than the problem?
7. Do we, in fact, have a problem?

The following examples serve to illustrate the dilemma of conflicting goals:

Coffee Cups: Polystyrene or Paper? McDonald's quietly went back to using polystyrene cups after briefly using paper ones. They had earlier reaped a public-relations bonanza when they switched to paper to "help the environment." Why the switch back? Customers complained. Although they were all for helping the environment, they didn't like leaking cups or burning their fingers. It also turns out that polystyrene retains heat better, and on a per-cup basis, polystyrene is cheaper than paper.

Save People or Save the Environment? The M1 Abrams tank and the Bradley fighting vehicle both use halon gas in their automatic fire suppression systems. Halon can suppress a fire milliseconds after detection. However, halon happens to be a chlorofluorocarbon (CFC), said to be harmful to the earth's ozone layer. The United States signed the International Montreal Protocol agreement that bans the use of all ozone-depleting chemicals. In response, the DoD directed the Army to find a replacement for halon.

The Army identified four alternatives. Unfortunately, the top three candidates were rejected because they did not have an Ozone Depletion Potential rating of *zero*. Ultimately, they decided on the fourth alternative: carbon dioxide. However, this gas has three major disadvantages. First, it takes twice as much carbon dioxide to do the same job as halon. Next, we trade one environmental problem for another. Carbon dioxide happens to be one of the global warming gases. The third drawback, however, is the most severe. The amount of carbon dioxide needed to suppress an internal fireball in the tank turret would *kill the crew*.[1]

Automobiles: Gas or Electric? Gasoline-powered cars have two problems. While depleting a non-renewable resource, they pollute the environment. On the positive side, they are cheap, convenient to use, and have near unlimited range (no overnight charging required).

Advocates of electric cars are advertising them as an environmentally friendly alternative. Three primary sources of battery power are: lead acid, nickel cadmium and sodium sulphur. Each has advantages and each has significant disadvantages.

- The lead acid battery allows travel at speeds of up to 25 mph for a maximum range of 100 miles before recharging. However, the battery is heavy and takes up considerable space.

- The nickel cadmium battery is 50 percent more powerful. However, it costs $30,000 and requires replacement every 2 years [not to mention the environmental problem of disposal].

- The sodium sulphur battery is three times more powerful. However, it runs hot (600 degrees Fahrenheit) and is very volatile. When exposed to water in a crash, the result is a vehicular "meltdown."[2]

Several environmentally progressive states recently mandated that automakers build zero-emission vehicles. Also, California directed major automakers to convert 2 percent of their yearly sales — about 40,000 autos — to zero emission [read: battery-powered] vehicles by 1998. That total increases to 5 percent by 2001, and 10 percent by 2003.[3]

All parties must assess this socially appealing goal in terms of current technology. Electric vehicles are not new. They actually predate gasoline-powered ones. However, in spite of more than 100 years of extensive battery research, advances in electric power, weight reduction and cost were marginal at best. These drawbacks decidedly limit the marketability of electric cars. Therefore, mandating a technological breakthrough will not overcome the inherent limitations. The preceding examples show that environmental goals, no matter how noble, must be flexible enough to accommodate real-world constraints.

Guidelines for an Environmental Strategy

Since we cannot do everything, we must choose our environmental priorities wisely. Frequently, areas overlap between the goals of the firm and the environmental movement. We can make more gains on the environmental front if we focus on those common areas.

Figure 1 provides guidelines for developing environmental goals and policy. Honest answers to these questions will help to eliminate goals that are: 1) the most trivial; 2) unsubstantiated; 3) emotionally driven; and 4) cost-prohibitive. Those that remain will truly warrant attention. They will also be more likely to gain and maintain the support of the acquisition community and the public.

Are the underlying assumptions correct? Before we devote massive resources to solve an environmental problem, we must first determine that a problem, in fact, exists. For example, were the acidic lakes in the Northeast the result of acid rain or naturally occurring forces? The National Acid Precipitation Assessment Project, commissioned by Congress, sought to determine just that. Surprisingly, the findings of this $600 million project did not substantiate the conventional wisdom of the acid-rain problem. In spite of evidence to the contrary, Congress passed the acid-rain provisions of the Clean Air Act of 1990. As a result, American businesses and consumers will now pay $10 billion annually in compliance costs.

This is a problem in relation to what? Provide a frame of reference for the severity of the problem. By compar-

ing our waste disposal problems with other industrialized countries, it becomes clear that the issues are more political and social, than physical. In his book, *In Defense of Garbage*, Judd Alexander identifies plenty of space for landfills in this country. The U.S. has the lowest population density of the industrialized nations. The real problem lies with the increased costs posed by new disposal standards. This includes the dwindling capacity of existing facilities meeting new codes, and the NIMBY (Not In My BackYard) attitude toward establishing new facilities.[4]

What is 100 percent, and what is the percent we are concentrating on? We should concentrate our attention and limited resources on the biggest part of a problem. This is especially true in a era of decreasing defense budgets. Ironically, we tend frequently to do just the opposite. We devote massive resources on just a fraction of a problem.

The reduction of automobile exhaust emissions is a desirable environmental goal. However, our efforts focus almost exclusively on new cars through increasingly restrictive and costly legislation. Unfortunately, we are very near the technological limit of pollution abatement in new cars. We experience costly diminishing returns as we try to further reduce pollution.

An analysis of the entire auto emission problem was very revealing. Between 50-80 percent of the pollutants come from just 20 percent of the cars (and these are not the new ones). It would be more economical and environmentally effective to target the older cars that account for the majority of the pollution. As a first step, several communities in Illinois and California established a "cash-for-junkers" program.

An alternative solution to the diminishing returns problem in new cars is to broaden the definition of: *What is 100 percent?* Over one-half of automobile pollution comes from gasoline evaporation. This occurs during refueling and when the car is parked. Seeking ways to reduce evaporation can have economic as well as environmental advantages.

What is the trend: short-term as well as long-term? Three points require emphasis. First, a one-time occurrence is not a trend. Next, it does not make environmental or economic sense to rectify a problem that is correcting itself. Finally, past trends using real data are better indicators of the future than fictitious modeled ones.

The public seriously believes the world is rapidly running out of natural resources. This belief, in part, stems from computer models that project future shortages based on current usage. The "Club of Rome's" 1972 book, *The Limits of Growth*, made many dire predictions on the future availability of natural resources. Their model left out two crucial variables. First, the impending scarcity of materials causes people to seek more economically attractive alternatives. And second, advances in technology allow us to do far more, with far less.

The first computers filled an entire room with tubes, metal and wiring. They also required extensive energy to operate. Today an 8-pound laptop computer far exceeds the capabilities of its primitive ancestor. We are increasingly replacing raw materials with ideas, information and new technologies.

Copper is one of those metals supposedly destined for extinction. The communications industry uses copper extensively in cables. Two technological advances reduced the need for copper: the adoption of fiber optics and satellites, which revolutionized the communications industry. As a result, copper usage is a fraction of its earlier level. A pound of glass fiber-optic cable, composed mainly of sand, can carry as much information as a ton of copper.[5] This same trend exists for other metals as well. If we were running out of these materials, rising market prices would result. However, we see just the opposite. The relative prices for most metals continues to decline. We are moving away from metals toward lighter composite materials.

What is the real objective, and are we working to that end? A joint Environmental Protection Agency (EPA)-Amoco Corporation study looked into the actual emissions from the Yorktown oil refinery. The main pollution problem was benzene, a carcinogenic byproduct of oil refining. The EPA drafted the benzene abatement requirements in 1990. However, the basis for those standards was a 1959 study of benzene evaporation in *waste water*. To ensure compliance, Amoco spent $41 million to trap air pollution from the refinery's waste-water system. When the benzene emissions were actually measured, they were 20 times *less* than predicted by the 1959 study. The real pollution took place on the loading docks, where the fuel is pumped into barges. This activity produced five times as much benzene pollution from the waste-water system. The irony is that EPA rules do not even address the loading docks. Amoco could have corrected the real problem for only $6 million.

Based on these findings, Amoco petitioned for an exemption to the rules requiring it to complete its massive $41 million sewer system. The EPA said no! There was no procedure to waive existing environmental laws and regulations, even though they were contradicted by an EPA-sanctioned study.[6] In this case, was the EPA goal to reduce pollution, or to perpetuate government bureaucracy and red tape? This illustrates a "lose-lose" example. Business was a loser, the consumer was a loser, and so was the environment.

Is the proposed solution worse than the problem? Although we might have

a problem, the better alternative might be: *just learn to live with the problem*. Toxic materials become a problem only when they occur in high concentrations (in soil, water or air). Asbestos falls in this class. Near hysteria resulted a few years ago with the discovery of asbestos in many schools across the country. The building industry used asbestos extensively as a fire-retardant insulator in ceilings and walls. The actual asbestos concentration in the classroom was minimal, and so was the threat to children. This condition, however, was unacceptable. Instead of using money for education, school systems wasted millions to rip out the inert asbestos. As a result, the concentration of asbestos fibers in the air skyrocketed. And so did the risk to children.

Do we, in fact, have a problem? For many in the environmental movement, the elimination of packaging has become a crusade. We assume packaging to be the biggest villain in our solid waste crisis. Germany imposed a draconian package recycling program that gives little regard to the cost or market inefficiencies that result. Before we too embark on a similar path, let's first answer two questions. First, how much packaging goes into landfills relative to other waste? And second, why do we have packaging in the first place?

Consumer packaging discards account for only 10 percent of the waste in landfills. In contrast, just three components account for over 50 percent of the total. These are: 1) construction and demolition debris; 2) landfill lining and cover materials; and 3) yard waste. The United States has more yard waste on a per-capita basis than any other nation.

As late as 1939, U.S. cities were reporting annual per-capita discards of garbage, ash and rubbish 20 percent greater than we now find. In Mexico today, the per-person/daily discards are 20 percent more than their U.S. counterparts. The difference in both comparisons stems from advances in food packaging that result in less overall waste and spoilage. In 1987, the percent of food spoilage in the United States was 17 percent. This compares with 50 percent for the former Soviet Union, and 70 percent for India. According to United Nations statistics, Americans discard less food waste than any other country in the world.[7]

Packaging provides a valuable environmental service. Without it, we would have more waste due to higher levels of breakage and spoilage. Thus, the preservation and waste avoidance advantages far outweigh packaging's disposal disadvantages.

Every Alternative has Costs, Benefits and Consequences

We must base environmental decisions on scientific facts and a thorough analysis of alternatives. There is no "silver-bullet" solution to environmental problems. Most problems are not really problems at all. They are simply situations that require the weighing of trade-offs between alternatives. This is especially true with environmental problems.

Every alternative presents a new set of problems. We are quick to choose expedient solutions with apparent positive results. However, these short-term solutions can have unexpected, long-term negative results. We must seek to determine the costs, benefits and limitations of each alternative.

Environmental Life Cycle Analysis

One tool to weigh trade-offs is environmental life-cycle analysis. The decision to replace or phase out a material for environmental reasons must consider more than just the end product. To determine the true environmental cost of each alternative, managers must look at the entire life cycle of a product. This would include an assessment of all the materials, by-products and processes that go into, or result from, making a product. The analysis begins with raw materials and ends with final disposal of the product.

To evaluate the environmental cost of each alternative, the following are suggested areas to measure:

- volume of raw materials used;
- volume of toxic materials used and produced;
- water consumed;
- energy used;
- transportation expenses;
- waste discharged into the ground, air or water; and
- volume of the final product ultimately discarded.

Environmental Strategies

For environmental programs to succeed, organizations need to rate their operations using the environmental life-cycle analysis. Once the analysis is complete, the company should pursue a strategy that balances environmental concerns with the realities of the marketplace (domestic and international).

Figure 2 provides a list of potential environmental strategies, divided into two broad categories: pre-manufacturing or design-related approaches and post-manufacturing. The latter group includes many reactive "end-of-pipe" strategies such as cleanup and recycling. Unfortunately, these two strategies garner the majority of the attention and the money allotted to environmental issues.

The key is to view all strategies collectively, which will help organizations develop an integrated environmental strategy. Also, regulatory agencies should provide the latitude to choose one or more strategies. The goal is to have options that make both environmental and business sense (for a particular industry).

Environmental policy makers and the regulatory agencies must fully comprehend the following: "No one

solution fits all industries, nor all situations within the same industry." As we saw in the EPA/Amoco example, mandating one solution can be inefficient as well as counterproductive. Frequently, the unorthodox approach provides the best solution.

Many of the strategies are complementary to each other. In other cases, they can be mutually exclusive. By making products out of an array of materials, durability increases. This, in turn, increases the product's longevity — a desirable environmental trait. However, the multi-material composition makes the popular recycling option far more complicated and less practical.

Recycling: Pros and Cons

The overemphasis on recycling illustrates the familiar adage of "too much of a good thing." Most recycling programs experienced limited financial success (and this is being generous). *Recycling will only work if there are well developed end-markets for recycled products.*

Recycling advocates are quick to make a point. Recycling will work only if people buy recycled products. But they will only buy recycled products that are cost competitive with the non-recycled products. Barring this crucial ingredient, advocates appeal, with limited success, to everyone's sense of responsibility to be good [environmental] citizens.

Recycling comes with a tragic irony. The more successful a recycling program becomes, the more it floods the limited markets. This depresses the resale market that, in turn, raises the cost of the recycling program. Many environmentally supportive consumers are beginning to wonder why the cost of their trash collection increased after their localities implemented a recycling program.

Neither industry nor the DoD should recycle just for the sake of recycling. Nor should regulatory agen-

FIGURE 2. Environmental Strategies

Pre-Manufacturing (or Design) Environmental Strategies:

***Elimination*—A part of a product is discontinued with little or no impact to the function of the product. Example 1: Selling toothpaste by the tube only, the outer box package is eliminated. Example 2: Electronic-Data-Interchange eliminates the use of paper as a communication medium.**

***Source Reduction/Concentration*—The volume of a product is reduced yet it still functions at, or near, the same performance level. Example: Liquid laundry detergent is concentrated so that now only half the amount is needed to meet the same performance level.**

***Substitution*—The replacing of a toxic material with a nontoxic one with near the same level of performance.**

***Extend Useful Life*—Making products more durable postpones the ultimate disposal problem. Example: Automobile tires now have a longer useful life.**

***Process Modification*—Example: Changing the production or operations process so as to use less energy and yet still accomplish the same function.**

Post-Manufacturing (In Some Cases "End-Of-Pipe") Environmental Strategies:

***Recycling*—A material or product undergoes a second manufacturing process to become the input component of a second product. Examples: Paper, glass, and aluminum.**

***Resource Recovery/Reclamation*—Only a portion of an end-product is reused or recycled. Example: Reclaiming silver in the photography development process.**

***Reuse*—A product is repeatedly used "as is" with no secondary manufacturing process, as opposed to recycling. Examples: Returnable bottles and shipping pallets.**

***Incineration*—The burning option has the potential to reduce the weight of waste destined for a landfill by 80 percent and the volume by 90 percent.**

***Composting*—The process of biodegrading organic material — yard waste, food and paper — into compost or humus.**

***Treatment*—By chemically or biologically treating a toxic material, it becomes inert or non-toxic.**

***Disposal*—The most expedient solution where waste products/ materials are simply disposed of "as is" in a landfill.**

***Containment*—Extremely toxic or hazardous materials are sealed or "entombed" as the only viable solution.**

***Clean-up*—This is an unplanned solution to a waste problem that results from an accidental spill or the leaking of some storage facility.**

cies (at the city, state or federal level) mandate recycling just for the sake of recycling. For some products, such as aluminum, recycling is cost-effective. The process to recycle aluminum consumes 80 percent less energy than the smelting of new bauxite ore. And there happens to be a well-developed market for recycled aluminum. For other products, however, recycling makes neither environmental nor economic sense.

Glass

In contrast to aluminum, glass recycling reaps only marginal benefits. Glass is heavy, resulting in higher monetary and energy outlays due to increased transportation costs. Interestingly, making new glass and melting existing glass use roughly the same levels of energy. However, to recycle existing glass requires a costly sorting process. Recycled glass also has a "clouding" problem when different colors are mixed or if impurities exist. And finally, sand, the major ingredient in glass, is plentiful and inexpensive. For this reason, making new glass is usually more cost effective than recycling.

Even in Seattle, nationally known for its aggressive recycling program, glass presents a significant challenge. Two years ago, used glass sold for $30 a ton. Last year, Seattle's recycling program collected 40,000 tons of glass. This overwhelmed the state's only commercial glass furnace, which had a yearly capacity limit of 32,000 tons. As a result, the bottom fell out of the glass recycling market. The city is now stockpiling glass in the hope that the market will somehow improve. Ironically, some of the glass was even dumped into landfills.[8]

For glass, alternatives exist besides recycling. Many remember as children collecting deposit bottles for some extra spending money. As a side benefit, the roadsides, fields and parks were kept free of discarded bottles by those young [environmental] entrepreneurs. This is an excellent example of the reuse strategy. Here, the product is reused in its original form without going through another potentially pollution-producing manufacturing process, as in recycling. However, this approach includes the environmental and monetary costs of cleaning (water, detergent, energy and discharge) and, as in recycling, additional transportation expenses.

A second alternative for glass is source reduction. For years, the glass industries have been using a new "Light-Weighting" process that maintains the function of glass as a container. However, glass uses less materials in its production. Today, glass bottles are 25 percent lighter than they were in 1984. Did the glass industry change its manufacturing process for altruistic environmental reasons? No, they made the change because it made economic sense. It just happens to make sound environmental sense as well. That is the whole point. Government and industry should strive for solutions that make both environmental and business sense.

Paper

Management should concentrate its attention on those problems that: 1) are large relative to other problems; and 2) exhibit a trend showing the problem is getting worse. Paper falls into both categories. If we consider all paper — packaging, office paper, newspapers and "junk mail" — it becomes the largest component of landfills at 40 percent. And the trend is increasing.

Ironically, advances in technology aggravate the paper problem. Our use of paper increased significantly as a result of the use of laserjet printers and department copy machines. Every office is now a miniature print shop. We no longer use "white-out" to correct minor mistakes — we reprint the entire document. We also make far more extra copies than we need — *to be sure*.

What is the best environmental strategy for paper? The near unanimous response would be recycling. Unfortunately, paper recycling presents us with another dilemma. As in the glass example, the more popular paper recycling becomes, the more that success undermines the program. In some parts of the country, it is cheaper to take old papers to the landfill than to recycle them.

An alternative to recycling and better solution is to combine source reduction with recycling. One way to reduce paper usage is to send all interoffice correspondence (reports, letters and "flyers") through electronic mail. Besides the in-house efforts, electronic data interchange and paperless contracting represent a similar approach between suppliers and customers. The use of an electronic medium helps the environment in two respects: less office paper to either end up in landfills or to be recycled; and best of all, the financial incentive to improve the company's bottom line.

Beyond the Organization

Besides the obvious in-house efforts, the environmental strategy should extend beyond the firm. This will require cooperation between customers and suppliers. In other cases, it may even make sense to cooperate with competitors or with unrelated industries.

We are in an era of reducing the number of suppliers to each firm. In many cases, this results in closer buyer-supplier relationships. Just-In-Time delivery practices then become practical for many industries. Because of reuse and recycling strategies, this also generates ensuing economic benefits. As an example, firms can adopt reusable containers and pallets. Or, they can jointly develop packaging that is reusable or, at least, easier to recycle.

All manufacturers of dry cell batteries agreed to stop using mercury — a highly toxic metal — in their products. This socially acceptable form of

industrial collusion eliminates the risk of mercury pollution. Mercury is no longer a problem at the manufacturing front end or at the disposal end of a product's life cycle. Dura-cell uses this change for marketing mileage. Their battery packages now display an "environmental green" design with the words "Environmentally Improved" at the top. For Polaroid, the elimination of mercury helped to make their batteries recyclable (Figure 3).

One industry's trash can be another's treasure. Many cement manufacturers use the strategy of resource recovery. They use the wastes from other industries as an ingredient in their cement products. In another case, a furniture manufacturer sells fabric scraps to the auto industry for use as car lining. They also sell their leather trim scraps to a luggage company to make attache cases.

Under the proper circumstances, the incineration strategy can meet multiple environmental goals. Wheelabrator Technologies Inc., has 14 incineration plants that burn trash at very high temperatures. This reduces the weight of the trash by 80 percent and also decreases the volume by 90 percent. This process helps to decrease the rate at which landfills reach capacity. Another environmental benefit is possible from incineration. Wheelabrator uses the heat from the process to drive turbines that generate electricity for 6 million people. This reduces the consumption of oil by more than 10 million barrels a year.[9]

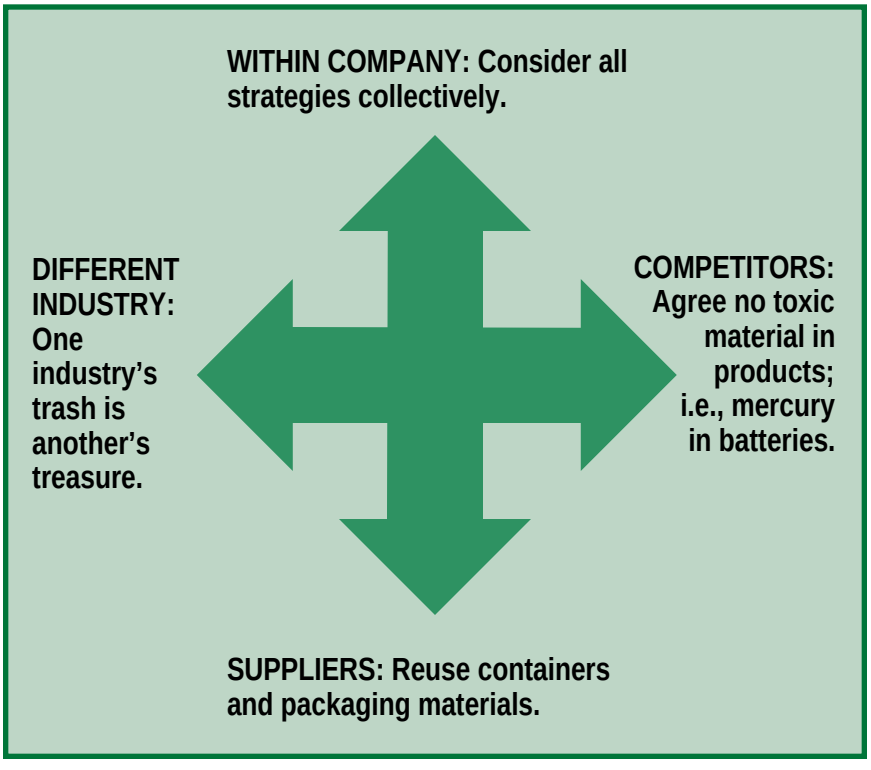
Conclusion

The solutions to our environmental problems must come from the collective and cooperative ideas of business, government and individuals. If we continue down the current path of draconian environmental legislation, we will all lose. Businesses will either leave the country or fatally focus on the borderline of regulatory compliance/noncompliance. In the DoD, decreasing funds sorely needed to maintain force structure and readiness will be diverted for environmental compliance. Currently, there appears little incentive to develop a visionary environmental strategy. Both industry and the DoD need a comprehensive environmental policy that addresses the following realizations:

- We cannot do it all.
- We do not have unlimited resources (money, time or people).
- We cannot afford non-value added activities in the face of global competition and declining defense budgets.
- We should concentrate on "big-ticket" problems based on sound scientific data rather than on emotions or conventional wisdom.
- We should develop general environmental goals with enough flexibility to accommodate unorthodox solutions.

If we can follow these basic principles, we can expect to achieve, ultimately, a "*win-win*" solution — one that is good for the *environment*, good for *business* and good for *national defense*.

FIGURE 3. Best Strategy — A Combination



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