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Lessons from a Radical Industrialist

by

**Ray C. Anderson**

Thank you, Ted. That's a mighty generous introduction. And thank you for the invitation to speak. Jirka Rysavy, thank you for your vision in creating this conference.

Hello, everybody. Greetings from Atlanta!

I expect my accent is strange to many of you. So tune your ears as I begin with a story. It's been around for quite a while, so if you've heard it, please bear with me. It makes a point.

Two women met in line at the Pearly Gates. Said Mary to Nancy, "How did you get here"? Replied Nancy, "It was very, very cold; I went to sleep and froze to death. What about you?" Said Mary, "I came home unexpectedly, sure I would find my husband with another woman. I burst into the living room, but there he sat calmly reading the paper, smoking his pipe. I rushed upstairs and looked in every room; under the beds, in the closets. I ran downstairs, looked in every room, went into the garage, looked under the cars, in the tool shed; rushed back inside, downstairs to the cellar, back upstairs, and I had a heart attack on the stairs and died. So, here I am." "A pity," said Nancy. "If you had just opened the freezer door first. . .

My intent in these remarks is to open a door—maybe in a way you've not heard before—and to invite you to walk through that door into a world you may not have seen before. It is the door to possibility.

If I were introducing myself in my own way, with respect, Ted. . . I would say simply that I am a husband, the father of two daughters, the grandfather of five terrific grandchildren, and I am an industrialist—some would say a radical industrialist, but I am as competitive as anyone you know, as profit-minded as anyone you know. In this connection, I would not miss this opportunity to thank my customers who are here for their business.

My 53 year-long working life has been spent in industry. I founded my company Interface, Inc., from absolute scratch, from just an idea 36 years ago (1973), to produce carpet tiles in America for the emerging "Office of the Future". Today it is a billion dollar global producer of carpet tiles and broadloom carpets, primarily for business and institutional interiors, but carpet tiles also for the home under the brand name FLOR®, misspelled F-L-O-R. We operate production facilities on four continents, with sales in 110 countries.

If I were preaching today, I would offer as my text the words of Albert Einstein: "We cannot solve our problems with the same thinking we used when we created them."

Now, come through that door into my world. But I would say that this is not your typical door into industry, and my industry is probably different from yours. Come into a rather unusual, petro-intensive industrial setting, and see another example of *sustainability in action*, this radical industrialist's passion for the last 15 of those 53 years. The point of this visit, again? To gain a sense of what is possible in a highly challenging industrial setting.

However, to gain the most from this visit, you must be willing to think analogously about your own organization. So I invite you to apply what I offer, both explicitly and by analogy. This is about the new thinking that Dr. Einstein suggested. It is also about what sustainability begins to look like, once you get past definitions and set out to transform a petroleum-intensive plunderer of the earth on the factory floor and in the design studio.

A mechanical engineer is commissioned to design a production line to produce the same product at the same production rate as the production line he designed and built 10 years before. The process requires the pumping of a lot of viscous liquid. This time, he designs it to use 93% less horsepower (1/14 as much!). How can this be possible? This time, he specifies big pipes and small motors to pump the viscous material, rather than small pipes and big motors. He arranges to install the big, *straight*, short pipes *first*, and then install the production line thereafter; rather than installing the production line first and bending pipes here and there to fit them to the line. He has largely defeated the pump's enemy, friction. He now knows that friction varies inversely with the 5th power of pipe diameter, and every bend in a pipe further increases friction and decreases efficiency, as does distance (i.e., pipe length). Doesn't every engineer learn these things in school? Apparently not; this is "new thinking." Oh, yes, the entire production line costs less to build than its counterpart built 10 years before, and less to operate. The engineer has practiced *whole system optimization*, new thinking that has evolved from just 10 years before.

A carpet factory manager in southern California, where there's lots of sunshine, muses over the possibility of using photo-voltaics to produce some of the factory's electricity directly from sunlight. He scouts around and discovers that state assistance is available for such projects; then he asks his accountant to work out the justification. Even with state assistance, the project doesn't "pencil," according to the accountant, who is looking hard at investment and energy costs.

But the manager doesn't give up. He asks his marketing and sales counterparts, "Can you sell 'solar-made' carpet, something the world has never seen before?" Without hesitating, they reply, "Bring it on!" And today, 120kw of photo-voltaic, factory generated voltage at peak sunlight is connected to the California grid, producing electricity in such quantities that, were the electrical current channeled into the tufting process of the factory, it would power the production of a million square yards of "Solar-made™" carpet per year, generating incremental sales which the accountant overlooked in his preoccupation with costs.

Decisions about sustainability, made *in the round* including Marketing and Sales and customers—and, not the least, the value of leadership—are better decisions. This is new thinking brought on by a receptive market, astute marketers, and a technical innovation of the new industrial revolution—the *solar revolution*.

A factory engineer calls his counterpart at the city in which his factory is located. The conversation goes like this. Say, Patrick, the city has that unregulated landfill east of town. Any idea how much methane is coming off it going straight into the atmosphere? The city engineer replies, "No, but I don't think it is much." "Why don't you check?" "OK, I'll get back to you." He checks, and he is amazed at how much methane there is and how offensive it is to the nearby African-American neighborhood. Twenty circling vultures attest to that.

The two engineers begin to collaborate, and a year later a public-private partnership is solidified. The city commits the \$3 million in capital cost to capture and pipe methane nine miles to the factory. The factory commits \$50,000 to adapt two boilers, representing 6% of the factory's total energy usage, to substitute the landfill methane for the present natural gas. The two agree on a price for gas that is 30% less than natural gas (per unit of energy). Calculations indicate the landfill will produce methane for some 40 years, which translates into a financial advantage for the city, at present value, of some \$35 million (for a \$3 million investment)! A further advantage emerges: As methane is drawn off, the entire landfill volume is drawn down, increasing its capacity enough to allow the city to postpone opening its next landfill for an estimated 15 years. This is "win—win—win", new and synergistic thinking.

Recapping who has won:

1. The city reaps a huge financial return on its investment, converting a polluting *waste* stream into a lucrative *revenue* stream, and postponing the cost of opening a second landfill for years.
2. An offensive public nuisance is eliminated, an environmental injustice corrected.
3. The factory reduces its energy costs, and the landfill energy is used to power its newest recycling process. Renewable energy, for a renewable process.
4. The earth is spared greenhouse (GHG) gas emissions that contributes 21 times as much as carbon dioxide to global warming (methane is that powerful a GHG, really 60 x, but it remains in the atmosphere a shorter time than CO<sub>2</sub>).
5. The factory receives credit for of a greenhouse gas off-set of  $21 \times 6\% = 126\%$  of its total energy usage, and can now declare its operations “climate neutral”, no net contribution to global warming. For a further modest investment in verifiable off-sets the factory can neutralize its entire supply chain’s greenhouse gas contribution to global warming and declare its products to be “climate neutral” for their full life cycle, third party certified. The marketing arm for the factory realizes the market appeal of “climate neutral” and dubs its climate neutral products “Cool Carpet”<sup>®</sup>, which becomes a huge marketing success, contributing incremental sales and lifting the company’s image in ways advertising never could.

Sure enough we see that *waste can be food*, as in nature. In nature one organism’s waste is another’s food. What does nature have to do with business? We shall see.

A product designer, frustrated with lack of progress in implementing sustainable design, pleads, “Let’s do something, anything!” So, a designer re-designs a typical product to have one ounce per square yard, just 4%, less of its most expensive and energy-intensive material component (in this case, Dupont nylon). The re-designed product performs well in all the usual tests, so, for the moment, this is considered to be the “something” the designer was pleading for.

But an engineer, thinking new kinds of thoughts, wonders about the effect up-stream of this kind of design modification if it were made across the factory’s entire product line. So he asks Dupont a question that Dupont has never, ever, been asked before: “How much energy did Dupont expend from well-head to my receiving dock in making and delivering that bit of nylon?” We now know to call this “embodied energy”. The Dupont response is applied by the inquiring engineer, theoretically, across the hypothetically re-designed product line, and to his amazement and everyone else’s, on an annualized basis this turns out to be enough energy *not used* by DuPont (call it “nega-energy”) to run the engineer’s entire factory for half a year!

Today the average product in this factory contains 17% less nylon than 10 years ago; products are more beautiful than ever, all perform extremely well on the floor, and the off-set created up-stream each year is equivalent to more than two years of nega-energy (to Earth’s great benefit). The approach is now referred to as *De-Materialization through Conscious Design*. It is new thinking that considers up-stream effects—whole system optimization of another type, with expanded boundaries of consideration, reaching back into the supply chain all the way to the wellhead and the mine. The new thinking reminds us that each of our companies or organizations or cities or buildings is its entire supply chain. Your footprint and mine includes our suppliers’ footprints. No one stands alone.

A team of engineers, production personnel, and product designers collaborate to find another way to create patterned carpet. The conventional way, employed for years by the factory and its chief competitors, is to wet print patterns on a plain colored carpet base. Wet printing is water-intensive and energy-intensive, requiring an aqueous

dye application, high energy steaming to fix the dye, washing to remove excess un-fixed dye, and energy intensive drying to remove the wash water. Excess dye and wash water also require chemical treatment before release into the waterways.

But new thinking suggests that the tufting machine that forms the pile face of the carpet, in the first place, has untapped potential to precisely place tufts of yarn of selected colors to form quite intricate patterns. The bold decision is made to *burn the bridges* and abandon wet printing altogether, and to scrap the existing, stranded investment. Left with only one means of creating patterns, which the marketplace demands, development efforts result in entirely new families of patented inventions, giving the factory a proprietary *edge*, rather than handicap, in its marketplace.

What does Nature have to do with anything? One of those patented inventions in the previous example arises from the outrageous, ridiculous assignment by the Head of Design to his design team: to go into the forest and see how Nature would design a floor covering, “. . . and don’t come back with leaf designs (he says); that’s not what I mean. Come back with Nature’s design principles.” The Head of Design has read *Biomimicry*, by Janine Benyus. (*Biomimicry*: Nature as teacher, Nature as inspiration, Nature as mentor and measure.)

So the design team spends a day studying the forest floor and the stream beds, and they come to realize there is total diversity, even chaos—no two things are alike, no two sticks, no two stones, no two leaves. Yet there is a very pleasant orderliness in this chaos. So the designers go back to the design studio and design a carpet tile such that the face designs of no two tiles are identical. All are similar, but every one is different. How contrary this is to the prevailing industrial paradigm that every mass produced item must be the “cookie-cutter” same? Six Sigma uniformity!

This new product is introduced to the market with the name, “Entropy®” (a scientific term associated with disorder), and in a year and a half it moves to the top of the best seller list, faster than any other product ever has. The advantages of breaking the old paradigm, *insistence on perfection and sameness*, are surprisingly numerous: There is almost no waste and no off-quality in production. Inspectors cannot find defects among the deliberate “imperfection” of no-two-alike. The installer can install tiles very quickly, without having to take the traditional care to get the pile nap running uniformly—the less uniform the installation, the better; so he can just take tiles out of the box the way they come and lay them randomly. There is almost no scrap during installation; even piece-tiles can find a place in the installation. Then, the user can replace an individual, damaged tile without creating the “sore thumb” effect of a new tile placed among the old, that so typically comes with uniform precision perfection. Furthermore, there are no longer issues of dye lots; dye lots merge indistinguishably. This obviates the need for shelf stock (extra tiles) of the original dye lot, inventory on the shelf waiting to be used. And the user can even rotate the carpet tiles on the floor to equalize wear, the way we rotate tires on our cars, and make selective replacement of damaged areas. All of this is good for the environment through resource-efficiency. Nature, the inspiration, is anything but cookie-cutter uniform (She knows nothing about Six Sigma.), yet she is very effective!

Still, even with all these unexpected benefits, one wonders: is there still more to explain the success of “Entropy®”? Perhaps there is. A speaker on the environmental speaking circuit begins every speech by having her audience close their eyes and picture in their mind’s eye that ideal place of peace, repose, tranquility, serenity, creativity, comfort, and security—that perfect comfort zone. [We might try it here; humor me . . .] Then she asks, “How many were somewhere outdoors?” Look around. Almost every hand is up. It is amazing! We humans—the vast majority of us—gravitate to nature for that ideal comfort zone. I think that, somehow, Entropy® brings outdoor indoors in a subliminal way, and that is its real appeal. This quality has a name: “biophilia”, coined by the great

Harvard biologist E. O. Wilson. There is enormous power in *biomimicry*, and in *biophilia*. This is very new thinking. Today, a family of products—82 in all—are designed on the Entropy principle and represent more than 40% of sales for the innovative and enterprising business.

A similar team, thinking “out of the box”, asks, “How does a gecko cling upside-down to the ceiling?” The question arises in a session to figure out how to completely eliminate glue from the installation of carpet tiles. Even free-lay carpet tiles need a 25’ x 25’ grid of anchor tiles, stuck to the floor to create a repeating grid, or “picture frames”, of anchored tiles, within which the self-lay tiles are installed without glue. The session is about how to get rid of glue altogether.

Though the answer does not utilize *van der Waals* forces, as the gecko does, the solution is nevertheless completely revolutionary. A 2 ½” x 2 ½” releasable adhesive tape is applied, *sticky side up*, to the underneath side at each conjunction of four tile corners. The effect is to connect all tiles in the installation laterally, then let gravity hold the room full of carpet tiles snug-to-the-floor and in place, like wall-to-wall carpet. Sticky side up, not down, and only 6-1/4 square inches at that, less than 2% of each tile’s underneath surface.

The new installation technique, called Tactiles™, provides the market with the world’s first totally glue-free carpet tiles and becomes another successful proprietary differentiator for the company and its products. Glue is petro-derived and can be a devilish source of volatile organic compounds (VOCs) that contribute significantly to poor indoor air quality; but not so any more for this company’s customers, thanks to new thinking: *Up-side down thinking*. Geckos and carpet tiles? Who would have imagined?

Seven examples—real examples—of sustainability in action, resulting from new thinking, leading to previously unimagined innovations and dramatic reduction in fossil fuel usage.

1. Whole system optimization – drastic efficiency gain with big, short, straight pipes and small motors, rather than the other way ‘round.
2. Waste as food, converted to a revenue stream, a renewable energy source, and a greenhouse gas off-set, rather than continuing as a pollutant. A climate neutral factory and “Cool Carpet”, win—win—win; and an environmental injustice removed (another win).
3. In-the-round investment decisions, justified not on the basis of cost, but on market appeal, and a commitment to lead, ushering in a new industrial revolution—the solar revolution.
4. De-materialization through “conscious design” and up-stream thinking. The leverage may be *up there*, the *embodied* energy that can be negated? No one stands alone. Incidentally, our buildings embody large amounts of supply chain energy in their materials, something the USGBC/LEED need to address.
5. 5Burn the bridges, abandoning high impact technologies—water and energy—for low impact and, out of necessity, creating new inventions and a better way.
6. Biomimicry – How would nature do this? Biophilia—subliminal appeal to our limbic impulses designed into products, increasing customer satisfaction and psychological well-being.
7. Think up-side down.

As physicist and energy expert Amory Lovins says, “The best way to have good new ideas is just to stop having the bad old ideas.”

Believe me, I could go on and on with examples of new thinking. Fifteen years of this kind of new thinking and



innovation, combined with a determination to abandon the comfort of the status quo, can produce unimagined results. Yet it does not come naturally for us Homo sapiens, only through extraordinary commitment. The status quo is an opiate, a powerful opiate. Breaking with “We’ve always done it this way” is hard.

Yet, I know an industrial company that did make the break in the total, absolute, whole hearted pursuit of sustainability, and is transforming itself daily.

Consequently, I can report to you today that this company, that was once so petro-intensive for its energy and raw materials, you could have said it was an extension of the petro-chemical industry, from that starting place, with the new thinking I just described and a sense of shared purpose, over the last 12 years has reduced its worldwide net greenhouse gas emissions (GHG) by **71%, in absolute tonnage**, against its 1996 baseline, as adjusted for acquisitions and divestitures (i.e., “apples to apples”). Energy intensity is down 44% (per unit of production). Fossil fuel usage has been reduced 60% (per unit of production). The cheapest and most secure energy supply of all is energy not used through efficiencies.

During roughly the same time frame, the company increased its top line sales by two-thirds, and its EBIT (earnings before interest and taxes) doubled. Profit margins expanded, not contracted. Giving effect to the sales increase, **GHG intensity was reduced 82%**. This, I submit, is the magnitude of the reduction the entire global technosphere must realize before 2050 to prevent catastrophic climate disruption. The lesson here: *It is possible!*

All the while, this company was working through a four-year long industry recession that saw its primary marketplace, the office market—the entire segment—shrink 36%. The sustainability initiative was a huge factor in survival.

Twenty-four percent of its raw materials now come from renewable sources, either recycled or bio-based. Some of its products are as much as 70% recycled content. Its goal: 100% renewable by 2020.

Its water usage, again “apples to apples”, is down 74% in its core carpet tile business. A major factor is abandoning energy- and water-intensive printing for a more efficient way to create patterns with its carpet tiles – burning that bridge.

Its electrical energy is now 89% from renewable sources (eight of its ten factories operate on 100% renewable electricity); while 28% of *total* energy is from renewable sources (It uses a lot of energy that is not electricity). Its goal is 100% renewable by 2020.

A third of its smokestacks have been closed off, obviated by process changes; 71% of its effluent pipes have been abandoned, obviated by process changes. Its goal is to eliminate smoke stacks and effluent pipes altogether.

Carbon dioxide (CO<sub>2</sub>) emissions from 191 million airline passenger-miles have been off-set by the planting of 98,000 trees, though admittedly there’s a time lag for the trees to grow; its vehicle fleet’s CO<sub>2</sub> emissions have been completely off-set with verifiable off-sets costing just less than 4¢ per gallon (amazing how cheap carbon-neutral can be!).

Its manufacturing scrap going to the landfill has been reduced by 78% (per unit of production); and 175 million pounds (87,500 tons) of its products, at the end of their first useful lives, have been diverted from landfills by its closed loop recycling efforts (precious energy-intensive organic molecules, salvaged to be given life after life). This is real, and it increases daily as reverse logistics become more effective.

Since 2003, it has produced and sold more than 83 million square yards of climate neutral “Cool Carpet™”.

Its total waste—measured against perfection, meaning *do everything, everything, right the first time, every time*—is down by half. The waste elimination effort has avoided costs totaling more than \$405 million over 14 years,

more than covering all the costs associated with R & D, process changes, employee training, and capital investments made in the pursuit of sustainability. The entire initiative therefore has been self-funding.

This company reckons it has reduced its overall environmental footprint by more than 50%, perhaps 60%, depending on how various components are weighed; and by the year 2020, believes it will be totally sustainable with zero environmental footprint: taking from Earth only what can be rapidly and naturally renewed by the earth (not another fresh drop of oil) and doing no harm to the biosphere. It has publicly stated this goal, and annually reports its progress, or lack of progress, on its web site in completely transparent fashion.

This reduced footprint is reflected in every product the company makes anywhere on Earth, not just one here and one there. This company simply does not believe it or anyone else can produce green products in a “brown” company.

Maybe you have already realize it, but you have just been subjected to an emerging field of metrics: “ecometrics;” altogether different from financial metrics, yet as indispensable for measuring environmental progress as financial metrics are for fiscal progress.

This company further believes it will become restorative, putting back on balance more than it takes from Earth and doing good for Earth, not just no harm, through the power of its influence and in its role as *sherpa*, leading others along the path it is blazing as it climbs “Mount Sustainability”—that very high mountain but, very importantly, one that is proving to be scalable.

Yes, the company is publicly owned. Its shares trade on NASDAQ. Its Board of Directors is highly independent and also highly supportive of the sustainability mission. They recognize that the very persona of their company, resulting from its sustainability mission, is a competitive advantage in an extremely competitive marketplace.

The 2008 and 2009 economy and market sell-off have not spared the company. It’s not immune to economic decline, so it has reduced its workforce 25% to match the decline in demand; yet it faces the economic downturn with great confidence in the competitive advantage inherent in its business model. Because. . .

This company’s people will tell you emphatically that these initiatives have been amazingly good for business. The business case is crystal clear: Its costs are down, not up, dispelling a myth and exposing the false choice between economy and environment—those \$400 + million in waste elimination alone!

Its products are the best they have ever been, because sustainable design, especially biomimicry (inspiration from Nature), has provided an unexpected wellspring of innovation.

Its people are galvanized around a shared higher purpose. Better people are applying, and the best people are staying and working with purpose. You cannot beat a shared higher purpose for attracting and bringing people together. This is the pinnacle of Maslow’s hierarchy of human needs: “self-actualization” through identifying with a higher purpose.

And the goodwill in the marketplace generated by this initiative exceeds, by far, what any amount of advertising or clever marketing expenditure or huge promotion could possibly have generated; and is the single greatest advantage the company possesses as it faces economic downturn, yet it knows goodwill must be earned daily by doing, not talking.

Notice I have not mentioned risk mitigation, which I consider to be an incidental by-product of doing the right thing, yet, as you have probably noticed, is where so many discussions of sustainability begin and end.

This company believes it has found a better way to bigger and more legitimate profits—a better business



model, a better business strategy. Even during the most trying days of deep recession and belt-tightening in 2001-2004, there was not one thought of turning back, not one. This company's very survival—then as now—was largely attributable to its sustainability initiative, looking to nature's renewable, cyclical, solar driven, waste-free, resource-efficient processes for its inspiration. Nor is there any thought of turning back now, in the face of new marketplace adversity. Sustainability is in its DNA.

This company fulfills what Amory Lovins is talking about when he says, "If it exists, it must be possible". Fourteen years ago, had I described a hypothetical industrial company this way, it would have been thought to be impossible. A competitor looked me in the eye and called me a dreamer. Yet, as Amory says, if it exists, it must not be impossible after all. And it could not be happening without the new thinking, what Amory says Edwin Land, the inventor and founder of Polaroid, use to call, "The sudden cessation of stupidity".

It also requires permission from the top to fail, but to learn from failure and try again. Radical innovation simply will not happen without a willingness to risk failure but to learn and try again.

I know this company very well because it is my company, Interface, and I know first hand that everything I just said about it is true. What I have described is Interface's "Mission Zero."

If we can do it, anybody can. If anybody can, everybody can.

Now let me generalize what I have said so far by referring you to Paul and Anne Ehrlich's well-known environmental impact equation,  $I = P \times A \times T$ . Impact is a bad thing, the bigger the worse. It is the product of people, affluence, and technology. In other words: impact is caused by the combination of people, what they consume, and how it is made. This describes the industrial system that is degrading the biosphere through its environmental impacts—and we are all part of the travesty.

But what confines "T" to the numerator, where the more technology we throw at the problem, the worse the problem becomes? I suggest these are the technologies of the first industrial revolution:  $I = P \times A \times T_1$ , and they share some common attributes: They are extractive (they take from the earth), linear (take-make-waste), driven by fossil energy, abusive, wasteful, and focused on labor productivity (more everything per man-hour).

But what if we could move technology to the denominator, where more technology reduced impacts:

$$I = \frac{P \times A}{T}$$

Well, that would require a new industrial revolution:  $I = \frac{P \times A}{T_2}$

That is exactly what is happening, where technologies are renewable (not extractive); cyclical (not linear—no more take-make-waste); solar and hydrogen-driven (no more fossil fuels); benign (not abusive), emulating nature (where there is no waste; in nature, one organism's waste is another's food), and focused on resource-productivity (the productivity of all resources, not just labor).

Parenthetically, that formula has driven all R&D, all process development, and all product development at Interface for the last 14 years.

But maybe there is something that's not quite right about  ?

For one thing, a new industrial revolution is not an event; it is an unfolding process. There has to be a transition:

$$I \frac{P \times A \times T_1}{T_2}$$

So we will see  $T_1$  hanging on in the numerator for quite a while as it is progressively replaced by a growing  $T_2$  in the denominator.

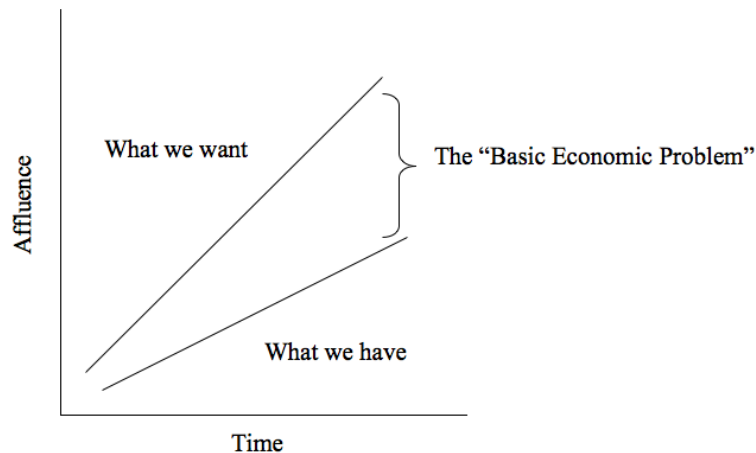
But is that enough, even if we all did it, to transform society? Well, this is where the 50 million strong LOHAS community comes in. What about that capital 'A'? To me, that suggests that affluence is an end in itself. What if we *homo sapiens* matured as a species enough that that capital 'A' were replaced by a lowercase 'a', suggesting that affluence is not an end in itself, but only a means to an end, and the real end is happiness (H)?

That would reframe Ehrlich again to describe a new civilization: more happiness with less stuff—the “LOHAS Civilization”:

$$I \frac{P \times A}{T_2 \times H}$$

And if happiness were achieved by satisfying **needs, not wants**, that would redefine our system of economics.

Do you remember the first lesson in Economics 101? It described the “Basic Economic Problem” as the driver of all economic progress. Remember what “the problem” is? The gap between what we have and what we want (not need, want). Economics 101 hypothesizes that we humans can never close that gap. No matter how much we have, we will always want more.



LOHAS is proving the economists wrong. LOHAS is ushering in the new civilization. More happiness, less stuff; needs, not wants.

As businesses attuned to this basic transformation in society, we have to evolve the supply side to anticipate the changing demand side for— and do it sustainably. That’s enough to keep us busy for a lifetime. Thank you and good luck. Make the most of this terrific conference.