



Climbing Mount Sustainability

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For nearly ten years, my company, Interface, Inc. - multinational producer of carpet tiles, broadloom carpets, textiles, and architectural products for worldwide commercial and institutional markets - has been committed to achieving environmental sustainability. We have learned a lot about transforming our petro-intensive industrial enterprise to reduce its environmental impacts, eventually to zero. As physicist Amory Lovins often says, "If it exists, it must be possible." And to use Alan Atkisson's (1999) metaphor of amoeba-like progress, early movers in sustainability - people and companies - are the "pseudopod" reaching out to establish a new foothold for moving the "body" of the industrial system to a new state- harmony with the natural world on which the entire economic system is utterly dependent. Interface is an early mover, seeking to demonstrate the possible.

I hope in this article to provide a clear picture of how I believe the entire industrial system must change to survive, because I believe survival is at stake. As I write, I am wearing two hats: The first is that of an entrepreneurial industrialist, the founder of Interface, Inc., a start-up-from-scratch venture that has grown to be a billion dollar enterprise. The second hat I share with every living creature, that of an astronaut on Spaceship Earth.

However, the mind beneath those two hats is one mind, reconciled to the inseparability and interdependence of the world of business and the natural world. This view may not be held by many, perhaps most, of my peers in the business world, and I did not always hold it myself.

For the first 21 years of my company's existence, I never gave one thought to what we were taking from the earth to feed our petroleum-intensive manufacturing processes, or what we were doing to the earth with our waste, emissions, and effluents... until August 1994, when I read a book that changed my view of the world, my life and, eventually, my company's very nature. The book was Paul Hawken's *The Ecology of Commerce* (1993).

I had been asked to make a speech to a newly constituted company task force that was convening to assess our company's worldwide environmental position. They were convening because our customers were asking, "What is Interface doing for the environment?" and, at the time, we had no good answers. In thinking about that speech, which I really did not want to make, I could not get beyond, "We obey the law; we comply."

At that propitious moment, as if by pure serendipity, Hawken's book landed on my desk. Reading it, I quickly came to a chapter entitled, "The Death of Birth." That phrase, coined by Harvard biologist E. O. Wilson to describe species extinction, became the point of a spear, a spear that I feel in my chest to this day. It was an epiphanal experience, and for the first time in my life I became sensitized to the responsibility that we *homo sapiens* astronauts on Spaceship Earth have for the damage we are doing to our spacecraft and, as a consequence, to ourselves and to the countless creatures that share with us the thin shell of life, the biosphere.

Absorbed in Paul Hawken's treatise, I was convicted as a plunderer of the earth and as part of the system that is systematically fouling the passenger capsule of Spaceship Earth. Over time, that conviction has grown and grown. One only needs to take the long view, the truly long view of evolutionary time, to know that the present take-make-waste, linear system, driven by fossil fuels, wasteful, and abusive to a finite biosphere, simply cannot go on and on and on.

I made that speech, drawing freely on Hawken's material, and I shocked the people of that task force with the challenge to lead our company to environmental sustainability and, through our example, to lead the entire industrial world.

But, how to even think about sustainability? How to define it for ourselves? How to begin to move in that direction? And, just as important, how to communicate such a vision or present a plan of action to our company's 5500 people, who basically had never heard the word "sustainability," much less thought about how to meld it into their work lives? These were the daunting questions with which I wrestled for fully a year, while the task force members went back to their businesses with my challenge to lead. Only one thing was really clear: this was a mountain to climb, a mountain much taller than Everest and infinitely more difficult. We named it "Mount Sustainability."

For that year, while I struggled with my questions and the task force members confronted the *status quo* in their individual businesses, I spoke to our people at every opportunity to bring them along on the climb. It was easy to articulate the *why* of the imperative to climb this mountain, but not so easy to offer *hows*. I am sure our people, for the most part, discounted my ranting as the program of the month that would surely go away in time, because it was just too hard to really do, even to think about doing. It was the early days in the sustainability movement and there was no "how to" manual.

But, I stayed on the case. I read. I learned. I retained the best advisors I could find. I engaged members of the task force to help figure out ways to do something, anything, to make a start. And gradually a plan took shape. The plan clicked into place in my mind one night as I was watching the movie, *Mind Walk*, based on Fritjof Capra's book, *The Turning Point* (1988). Capra had written and Liv Ullman, the actor-scientist, was talking about the interconnectedness of all things. Though they were describing things at the sub-atomic particle level, they set me thinking about the connections between Interface and its various constituencies. That thought process resulted in the schematic shown below (Fig. 1), depicting our company and its connections to its customers and its suppliers (the supply chain), to its communities, and to the earth (the lithosphere, or crust, and the biosphere).

[Figure 1 is Figure 5-4, p. 109 - MCC]

The circle at the center of the diagram represents Interface. Inside that circle are its people, capital, and processes. Economists often put "technology" where I have put "processes," but to my mind, "processes" is the broader word and better choice. At the core are the company's values. Of course, this describes every organization. The combination is uniquely different for each company, but the general picture is the same for all.

But no company stands alone like this. Any company is connected to some important constituencies. Interface, like most companies, is part of a supply chain, with suppliers and customers. Products flow through that supply chain in one direction; money flows in the other direction.

The supply chain doesn't stand alone either. It is connected to some other important constituencies. Our suppliers are dependent on Earth's lithosphere for organic and inorganic materials. A very small amount of our raw material is natural, coming from the biosphere. Our processes are, unfortunately, connected to Earth's biosphere by the waste streams and emissions we produce. And the products we make, at the ends of their useful lives, go to landfills or incinerators, creating a further pollution load for Earth's biosphere.

We are connected to our community, too. Our people come from the communities in which we are located, and their wages return to the community's economy. Our capital comes from a sector of the community, the financial sector; and if we are fortunate enough to earn sufficient profits, dividends are returned to those investors, along with interest to our lenders, and, we hope, capital appreciation to our shareholders. Government is part of community, too. We are connected to it through laws, regulations and, of course, the taxes we pay.

With these linkages in place we have the typical company of the 20th Century and early 21st Century. There are good linkages, bad linkages, and some missing linkages that should be added. This diagram describes your organization, too, and every one of your suppliers and customers. This is a diagram of the ubiquitous, unsustainable enterprise and its unsustainable supply chain.

In a general sense, it is a diagram of the entire industrial system. Each supplier is an organization with people, capital, processes and values. So, too, is each customer. This is a schematic of the entire industrial system that has arisen out of the first industrial revolution -taking by extraction from the earth, making by linear, fossil fuel driven, abusive processes, wasting through emissions and waste streams, all to deliver products that end up in landfills and incinerators. And notice the relationship with the community-very "arms length," especially with its employees: wages for work. With investors: "Send us your money." With governments: "Give us your laws and regulations, take our taxes, and go away." We asked ourselves, "What is wrong with this picture?" Then we set out to transform Interface into something different. I have called that, "The Prototypical Company of the 21st Century". Let's see what that means, step by step. How do we get there? What's the plan?

We are pursuing this goal of becoming the prototypical company of the 21st Century on seven fronts simultaneously, though we are at different stages of progress with each. You might say we are climbing the "seven faces" of Mount Sustainability. We hope the seven climbs will meet at the point at the top, symbolically representing zero environmental "footprint." *The system conditions of The Natural Step define that point*, and define sustainability for us. Through hundreds of projects, our Research subsidiary is driving this. Every part of the business is engaged right down to the factory floor to create that prototypical company of the 21st Century.

The first face of the mountain is the face of "Zero Waste". In pursuit of Zero Waste, to attack an unwanted linkage to the biosphere, we have launched an effort we call QUEST, an acronym for Quality Utilizing Employee Suggestions and Teamwork. This is our total quality management (TQM) program, but much more. Quality, to us, means zero waste of any kind. Any waste is bad - a mispriced invoice or a mis-directed shipment, as well as scrap or defects, anything we do not do right the first time, any cost that goes into our product that does not produce value for our customers. Against ideal operational standards- zero waste- we identified \$70 million in waste in 1994, ten percent of sales, a figure that has grown in absolute terms as the business has grown.

We embarked on a mission to cut waste in half by the end of 1997. However, it took us six years to reach an index of .49 (.51 percent reduction), yielding \$165 million in savings to that point. We lost ground against the index in 2001, 2002, and 2003, with poor operating schedules due to economic slowdown, but have added \$66 million to savings against the baseline of 1994, bringing the cumulative total to \$231 million. This is real money, hard dollars, and it is paying for the rest of the revolution we are engineering in our company, which we call EcoSense. One result has been a reduction of scrap to the landfills of 59% from 1994 levels, 80 percent or more for many operations. QUEST has provided 28 percent of Operating Income over the nine-year period.

We reframed QUEST for the second and third three-year periods. We found, after the early savings, that with a larger company there was still \$70 million (per year!) in waste. We will pursue this initiative until all waste is driven out of our company, which will require reinvention of our company over and over. Therefore, we must be a “learning company,” which calls for great focus on our people and their development. It also means an unrelenting striving for perfection, i.e., zero waste.

The second face of our mountain, is “Benign Emissions,” and begins to attack another unwanted linkage to the biosphere. We inventoried every stack and every outlet pipe in our company, to see what and how much was being emitted. Since then, we have continually reduced emissions. Counting acquisitions since 1994, we started with 282 stacks. We have shut down 109 in the last nine years (a 39 percent reduction). I hope to live to see the last one closed. Furthermore, 22 effluent pipes have been reduced to ten (a 55 percent reduction). Factories with no outlet stacks or pipes- that is the vision!

But, we know that to prevent toxic emissions altogether we must go upstream and prevent all toxic substances from entering our factories in the first place. What comes in will go out- as product, waste, or emissions. We are staggered by how difficult this undertaking is. The inputs to our factories (and most everyone else’s) are replete with substances that should never have been taken from the lithosphere (Earth’s crust) in the first place. Nature put some of it there 3.8 billion years ago, and it should be left there; we could not have evolved in its presence. Filters are not the answer; end of pipe solutions are not sustainable. What do you do with the dirty filters? The First and Second Laws of Thermodynamics tell us there is no place called “away” to throw them. So we have learned to put the filters in our brains, not at the end of the pipes, and work upstream on the inputs.

The third face is renewable energy which must, in time, be solar, wind, and hydrogen (maybe gas turbines and biomass in the short-term), to run our processes. This shift will chip away at numerous unwanted linkages, both to the lithosphere and to the biosphere. There is good news on this front. Power from photo-voltaics is coming down in cost. Wind power is already competitive with fossil fuels. Landfill methane can be more economical than natural gas.

At Interface, our first large photo -voltaic project was a 127 Kwp (at peak sunlight) to produce the world’s first *Solar-made™* carpet. Our customers love the idea. It sells, so who cares if the electricity costs a bit more? We have contracted in Canada, the U.K., and Holland for green power, mostly wind and biomass. Even if it costs a premium, with reduced usage through efficiencies it is the right thing to do - and the smart thing. *Solar-made* carpet sells in Canada and Europe, too.

Thus, encouraged by the marketplace, we have declared all fossil fuel energy to be waste under QUEST- first, to be reduced to the irreducible minimum through efficiency improvement, then to be replaced by renewable energy. *So, the initial emphasis is on efficiency.* Saving energy is far less costly than generating it by *any* means. Consequently, our greenhouse gas emissions are down 31% in absolute terms, 37% in relative (rate based) terms. Today eight percent of our energy is from renewable sources. The goal is 100% and no greenhouse gas production.

The next face is “Closed Loop Recycling,” which further reduces unwanted linkages and brings new linkages into being! Two cycles are introduced: a natural, organic cycle, emphasizing natural raw materials and compostable products (“dust to dust”); and a technical cycle, giving man-made materials and precious organic molecules life after life through recycling. However, the recycling operation must be driven by renewable energy, too; otherwise, we will

use more fossil fuel for processing energy than we will save in petro-based materials in the first place. If we can get it right, we will never have to take another fresh drop of oil from the Earth. Cutting that umbilical cord is the vision, too, along with factories without stacks. Standing in the way, however, is the next face, transportation.

Resource-efficient transportation (logistics) is a different challenge. We can video conference to avoid the unnecessary trip for a meeting, and we can drive the most efficient vehicles available. We can site our factories close to their markets, and plan logistics for maximum efficiency. But unless we choose to shut down contact with our customers, we are dependent on the transportation industry for this one. Isn't everybody?

Yet, Peter Russell's "Global Brain" (1995) is waking up. Honda and Toyota have introduced their hybrid gas-electric cars. The Germans are working on jets that use hydrogen. Daimler-Benz has invested millions in a Canadian fuel cell venture. Amory Lovins is developing his Hypercar (Hawken, et al., 1999).

When we have done all else to reduce the greenhouse gases associated with transportation, we will close the remaining "carbon gap" with carbon offsets. "Trees for Travel" or other offsets will have to bridge the gap if we are to have carbon neutral, thus climate neutral, transportation. So, for every 1500 miles one of us flies in a commercial jet, we plant a tree. When the one survivor out of every 2.6 trees planted is fully grown, in 200 years or so, Earth will have gotten even for that trip. This, you see, is a long term strategy.

The "sensitivity hook up," our sixth face, spawns numerous new and desirable connections: *service to* and *investment in* the community, especially in education; together with closer relations with suppliers, customers, and among ourselves, getting everybody engaged and understanding where we are going and why. This leads to increases among all -- including our communities (by way of our people) -- in the awareness of the thousands of little things we can all do to inch toward sustainability. Ties to the community, to our suppliers and customers, and within our organization are all strengthened. The principles of Natural Capitalism (Hawken, et al., 1999) and the system conditions of The Natural Step (TNS) become at once our shared framework and our compass, pointing the way, and a magnet, drawing us toward the summit of the mountain. The ISO 14001 environmental management system is a given, a map for tracking progress. We have coupled it with TNS for a goal, a destination. Our people are galvanized by the higher purpose of climbing "Mount Sustainability," validating psychologist Abraham Maslow's contention that people want a higher purpose in their work as well as their personal lives.

The seventh, and final, face calls for the redesign of commerce itself, which probably hinges on the acceptance of entirely new notions of economics, especially prices that reflect full costs, internalizing the externalities associated with hydrocarbons, to create ecologically honest prices. To us, it will mean embracing extended producer responsibility and shifting emphasis from products to services. Therefore, we have invested in downstream distribution, installation, maintenance, and recycling - all aimed at forming "cradle-to-cradle" relationships with customers and suppliers. We want to build relationships based on delivering, by way of service agreements, the services our products provide: color, texture, warmth, acoustics, comfort, cleanliness, ambience, aesthetics and functionality; rather than selling the products themselves. The result is further breaking the undesirable linkages to the lithosphere and to the biosphere. Another highly desired result is increasing market shares at the expense of inefficient, slow to adapt competitors.

[Figure 2 is Figure 5-11, page 125 - MCC]

With this schematic of the last face of the mountain we see lots of changes from our beginning point. Numerous “Xs” indicate attacks on unwanted linkages. There are also new connections, depicting: renewable energy, closed loop material flows, more vital connections throughout the supply chain and with the community, and the service component that overshadows products.

[Figure 3 is Figure 5-12, page 127 - MCC]

Success on all seven fronts (a successful climb on all seven faces) will bring us to the summit of Mount Sustainability and our goal, “The Prototypical Company of the 21st Century.” The schematic, above, shows what it will look like. Such a company will have a number of characteristics. It will be strongly service oriented by means of products that deliver service. It will be resource efficient, wasting nothing, and cyclical (no more linear take-make-waste processes). It will be driven by renewable energy (minimized, thus afforded, through efficiency); and strongly connected to its constituencies (communities engaged, customers engaged, suppliers buying into the vision), and to each other. We believe our own “eco-system” of connected constituencies will emerge, with cooperation replacing confrontation. This company will be way ahead of all regulations, rendering the regulatory process irrelevant. Its values will have shifted, too. It will be committed to taking nothing from Earth’s lithosphere that is not rapidly and naturally renewable, and to doing no harm to Earth’s biosphere. The undesirable linkages will all be gone! New, vital linkages will be in place.

The prototypical company will be sustainable and just. It will serve as an example of the new industrial revolution, and will be *doing well by doing good*. It will be winning in the marketplace, but not at Earth’s expense, nor at the expense of our descendants, but rather at the expense of inefficient competitors. And it will be growing, too, even in a no-growth world, but at the expense of the inefficient, with declining throughput of virgin materials, eventually reaching zero. Only zero throughput of extracted natural capital is sustainable over evolutionary time (the true long run)- a radical thought, but a necessary objective, not just for Interface, but for the entire industrial system.

Our goal for Interface is to reach the summit by the year 2020. We are getting ready for the day when the price of oil reflects its true cost, when prices are ecologically honest, and virgin petro-based materials become very dear. Meanwhile, as our customers join in and climb that mountain with us, we will be doing well by doing good, creating a positive feedback loop that is good for Earth.

The *restorative* company will add to this diagram the one missing linkage, reinvestment in natural capital to restore the biosphere, to begin to repair the damage inflicted on nature over the nearly 300 years of the industrial age.

How are we doing at Interface? This is a work in progress. Though we will not be satisfied until we reach the top of Mount Sustainability and “zero footprint,” the progress in the first nine years has been remarkable. The carbon intensity of Interface is down 33 percent. That includes all the petro-derived material and energy extracted from Earth and processed through the entire supply chain to produce revenue for Interface, i.e., pounds of extracted petro-stuff per dollar of revenue.

This is the Interface plan, the Interface model for a sustainable industrial enterprise. It describes how we intend to get from *here* (unsustainable) to *there* (totally sustainable). In the nine years we have spent figuring out

how to integrate sustainability into our business, we have learned, without a shadow of a doubt, that it is a better business model, too, in the strictest business sense. People, process, product, profit, and purpose are all well served by proper attention to place, our Spaceship Earth. Doing well by doing good is a new and better way to bigger profits, and to greater, more genuine, shareholder value. In the most difficult economic conditions of our corporate existence over these last few years, the model has proven not only its viability, but its superiority. To business people everywhere, I urge you to take the step. Just try it; I think you will like it.

An industrial system that cannot go on and on and on, as is, must change. I believe every enterprise that is to survive must climb this same mountain and its same seven faces, and together we must figure out the eighth face to restore the health and productivity of the biosphere, the infrastructure that undergirds civilization itself.

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