

MIT Sloan Management Review

Interview by Michael S. Hopkins

What Executives Don't Get About Sustainability (and Further Notes on the Profit Motive)

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Celebrated scientist, entrepreneur and sustainable business strategist Amory Lovins on how companies can seize the opportunities they're missing.

INTERVIEW BY MICHAEL S. HOPKINS

AT THE A-LIST conferences on sustainability and business, Amory Lovins is the speaker whom all the other speakers mention from the stage. He's the touchstone — the talisman that others figuratively hold aloft in order to reaffirm their own sustainability bona fides and intellectual chops.

It's not clear whether Lovins even notices — or cares. He sits in the front row, bespectacled and mild mannered, and mostly appears to be curious — about everything — and to have no time for fluff. There's work to do. He's there to do it.

And thus has it been for Lovins for decades, especially since his 1982 cofounding of the famous Rocky Mountain Institute, an entrepreneurial, nonprofit “think-and-do tank” that, according to Lovins, continues to be misunderstood. “Our DNA is that of practitioners, not theorists. We do solutions. Occasionally I read in the press, to some dismay or amusement, that we are an environmental think tank; we are actually neither,” he says. “Our work is in advanced energy and resource efficiency.” Notably, RMI claims that half its revenues are earned helping implement what it learns in research. (The other half are from typical nonprofit sources.)

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THE LEADING QUESTION

What do execs need to know about sustainability as a business proposition?

FINDINGS

- ▶ Sustainability efforts don't cost, they pay.
- ▶ Map your flows and costs of materials and energy. You will find “leaks.”
- ▶ “Side” benefits of sustainability efforts — innovation, productivity, talent gains, appeal as partner — will exceed primary benefits.

Lovins has worked the intersection of sustainability and business for longer than most of us have known the intersection exists, along the way authoring dozens of books, including the pathbreaking *Natural Capitalism — Creating the Next Industrial Revolution*, and receiving a MacArthur Foundation “genius grant.” He spoke with MIT Sloan Management Review editor-in-chief Michael S. Hopkins as part of the Business of Sustainability research project.

When audiences of organization leaders ask what you mean by “sustainability,” what do you tell them?

The question wouldn’t arise because I don’t use the word.

What do you say instead?

I say what I mean. “Sustainability” means so many things to so many people that it’s pretty useless. There are various standard definitions you can quote (Brundtland, Forum for the Future, etc.), but none is generally accepted.

But behind your question is the core of something very important: the idea that doing business as if nature and people were properly valued actually creates stunning competitive advantage. To put it another way, if capitalism is a productive use of and reinvestment in capital, we can’t deal only with financial and physical capital — money and goods. We also need to productively use and reinvest in the two more valuable kinds of capital — people and nature. If you play with a full deck, using all four kinds of capital, then you make more money, do more good and have more fun.

But our survey and others show that businesspeople don’t generally believe that. What do you find they do believe, when you first talk with them? What misconceptions about sustainability — by whatever name — do you find yourself having to correct?

That’s a more useful question.

There is a fairly widespread view among

those least informed that sustainability means you do household recycling and maybe try to improve your energy efficiency, and that it usually costs you more and is inconvenient, though maybe it makes you feel better and gets your kids off your back.

In business, I love to have competitors who think that way — especially those who think that efficiency costs more or “green” costs more, because that’s extremely rare in

our experience. I’m hard-pressed to think of an example of anybody who’s failed to make money pursuing energy and resource efficiency. In [RMI’s] last 30-odd-billion-dollars’ worth of industrial projects, both new and retrofit, in 29 sectors, we typically save about 30% to 60% of the energy with a two- or three-year payback, so it’s one of

the highest-return, lowest-risk investments in the whole economy. And when we do new installations, we save more, typically 40% to 90%, but the capital cost almost always goes *down*. Thus in new installations and some retrofits, not only does investing in efficiency yield a handsome return, but often the marginal up-front investment is *less than zero*.

It’s not unheard of for green to cost more, but it’s quite unusual. It’s certainly not the case in well-designed new buildings or factories, nor in most green vehicles, with modest exceptions. And usually, if you’re greening an industrial process, it means you’re turning waste into profit. You’re cutting back on making stuff nobody wants like wastes and emissions; you’re designing them out. And that



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quickly leads to huge innovation and competitive advantage.

Then why hasn’t your point of view become conventional wisdom?

I think many people have fallen victim to dimly remembered, badly taught basic economics and assumed that markets really are perfectly efficient — that if the things that the advocates of sustainability were calling for were cost-effective, they would have been done already — as if nobody could innovate and all the important opportunities had already been exhausted.

Right, it’s the old joke. Guy says to an economist, “Look, there’s a \$20 bill on the street.” Economist says, “There can’t be. If there were, somebody would have already picked it up.”

Yeah. In fact, in every factory we go into we find the floor lined with \$10,000 bills. They’re mashing up around the ankles and spilling over the tops of our boots while the innovation tree keeps pelting our heads with more fruit.

Why don’t people pick up that money? What keeps companies from seizing opportunities that you describe as having no downside?

Well, it requires thought, which for some people is exhilarating and for others is painful. It requires change ... which requires relentless patience and meticulous attention to detail. In other words, it’s the same as any other management innovation. It’s like deciding to have a safety culture or Six Sigma; you really have to pay attention to make it work. It doesn’t happen auto-magically because you issue a memo saying it’s a good idea.

Company leaders often characterize the challenge a different way — they talk in terms of the “business case” for addressing sustainability. In our survey, executives say that they can’t figure out how to make

the business case, even when they're convinced conceptually that there should be competitive benefits. When executives tell you they can't make the business case, what do you tell them?

If they've read *Natural Capitalism* (free at www.natcap.org, along with an overview from *Harvard Business Review*) and nothing occurs to them, I sometimes suggest we spend a day together looking at their typical plants and operations, and something very interesting will turn up. After all, Dow [Chemical] recently invested \$1 billion to save \$9 billion worth of energy so far, and when United Technologies started paying attention, they cut their energy intensity 45% in five years. Yet nobody would have said these were sloppily run firms to start with. Or consider a very large beverage maker that could, we found together, make more money from something it was paying to throw away than from its main product (but it could continue making that money too).

What are the first steps? Where should they start?

Typically, with radical energy (and, where applicable, water) efficiency in their buildings, production processes and vehicle fleets, if any. That's Principle One of *Natural Capitalism*. Typically, Principle Two comes next — making things the way nature does, with closed loops, no waste and no toxicity. These shifts are both encouraged and rewarded by Principle Three, the “solutions economy” business model. Some firms have good opportunities when they follow Principle Four — reinvesting some of the resulting profits into the kinds of capital we're shortest of, especially nature.

Is there particular information that companies need to collect — and understand — in order to construct the business case that will argue for investment?

Yes. For starters, measure and reconcile physical flows (“gozintas” and “gozoutas”)

for energy, water and materials so you know where stuff goes and what you pay for it. (Just trying to close the books will often turn up surprisingly lucrative leaks.) Build a culture of measurement, curiosity and intelligent risk taking. Compare product and process efficiencies with theoretical minima. Don't benchmark against your competitors' efficiency; benchmark against zero waste, zero *muda*. In many plants that the owners think are running well, one can stand in the doorway and see 50% to 75% savings waiting to be exploited. For now, don't worry about whether you have enough capital to exploit them; the capital can be found if there's a good business case.

What do companies get wrong about this process? Are there common mistakes that, if avoided, would make the business case much easier to build?

The most pervasive mental handicap under which most executives labor is the assumption

that a very efficient building or factory must cost more, probably a lot more, up front. With good design, its capital cost will generally go *down*, not up, so questions about discount rates and payback periods won't even arise.

Many CEOs, astonishingly, confuse their top and bottom lines. I remember the head of a Fortune 100 firm whom I was able to tell that a great engineer about six layers down in one of his plants had saved \$3.50 per square foot per year on energy bills. The CEO correctly responded, "That's a million-square-foot facility, so he must be dropping \$3.5 million a year to our bottom line." But in the next breath, he added, "I can't get excited about saving energy, though — it's only a few percent of my cost of doing business." I had to do the arithmetic and show him that if, hypothetically, he achieved the same result in his 90-odd-million square feet of facilities worldwide, his total net that year would rise by 56%. That got his attention! The great engineer was quickly promoted and spread his practices all over the company.

Another common error is to tell the shop floor engineers to meet a 12- or 18-month simple payback on energy efficiency, even though the payback implied by the firm's IRR or ROI discounted cash flow hurdle rate is many times longer. In such cases I try to get the comptroller and the engineers to sit together with a graph translating between their respective metrics — then maybe they'll stop misallocating capital. But they also need to invest in resource efficiency up to their own marginal cost of capital — actually somewhat less than that, because it's a lower-risk investment than normal categories like production, marketing and R&D.

What other counterproductive managerial assumptions do you encounter?

Most executives assume that energy and



Lovins: Efficient buildings have side benefits.... Well-daylit retail shops show about 45% higher sales.

other resources will be used optimally without being well measured and without accountabilities and rewards. That doesn't work for any other cost either.

Most executives suppose that because their technical people are well trained, they'll design well. Wrong. Design is so poorly taught that all the engineering textbooks, at least

in the English language, teach the wrong methodology for such simple tasks as optimizing the thickness of thermal insulation or the diameter of pipes. (They compare energy-saving marginal investment in those parameters with the present value of the saved heating or pumping energy, without counting the avoidable *capital* cost of the heating or pumping *equipment*.) Hence RMI's effort to overhaul engineering pedagogy and practice (www.10xE.org).

Most executives pay their outside design professionals for what they spend, not what they save, then wonder why they get inefficient and costly designs.

The list goes on like this, but these examples may suggest the richness of the opportunity when one really pays attention.

It's interesting that here again you're talking about sustainability without using the word. You discuss the business case in terms of resource efficiency or building and process design or financial strategy. You don't make a case for addressing sustainability.

I think the key is to not try to make a business case for *addressing sustainability*. Instead, create a robust business strategy that takes into account all four kinds of capital but leads you to actions that you'd wisely undertake even if you had no environmental concern. Think about it: You don't want to make your business depend on a random variable, like oil prices, as the automakers have discovered. And you

don't want to make your business depend on the availability of something that's insecure, like fossil fuels or water, or things that can create conflict. You don't want to have those embarrassing conversations with OSHA or the EPA, so it's better to design out of your process anything that can harm the workers or the neighbors.

This goes back to the question about common misconceptions. A prevalent view is that environmental strategy is about manipulating the regulatory system to the disadvantage of your competitor. That's dead wrong. The essence of environmental strategy (if I were even to call it that) is to make regulation relevant only to your competitor, not to yourself, by designing all the bad stuff out of your operation. The social and market forces that are demanding and receiving such amazing innovation in technology design and competitive strategy can all be phrased in different ways depending on what you're personally worried about. Whether you're driven by environmental issues or national security issues or competitiveness and profit issues, you can still end up doing precisely the same things.

So you think strategy ought to be formed in ways that don't require somebody to be invested in protecting the environment, just invested in making smart strategy?

I wouldn't put it quite that way. Often people do come for help because of environmental concerns, but if they do, I'll say, "Well, here's how to do what you want, and by the way, it'll be extremely profitable — much better than your present business and more robust and secure." If they are concerned about, say, national security, I'll say, "Oh, by the way, this also has these economic and environmental benefits." If they have a truly narrow bottom line approach, I'll say, "Boy, are you going to make a lot of money off of this. Here's how. And by the way, it will also have security and environmental benefits." So, I just help fill gaps in their benefit portfolio.

Indeed, energy efficiency is an interesting

example, because besides being very profitable in private internal cost, it often has side benefits that are worth one or two orders of magnitude more than the saved energy.

Benefits such as ...?

For example, efficient buildings in which you have better thermal, visual and acoustic comforts — where you can see what you're doing, hear yourself think, feel more comfortable, and enjoy clean air — will typically yield 6% to 16% higher labor productivity in offices. Well-daylit retail shops show about 40% higher sales pressure. Daylighting also increases speed of learning, as measured by test scores, by 20% to 26% in primary and secondary schools. An efficient supermarket will achieve better food safety. An efficient data center will have an order of magnitude better uptime. An efficient steel mill will get production benefits as valuable as its energy savings. An efficient, green hospital will observe faster

healing, less pain, fewer errors and fewer readmissions. The list goes on.

Efficient buildings generate up to 16% more productivity?

Yes. Oh, and since in a typical office you pay 164 times as much for people as for energy, if you had a 0.6% or so gain in labor productivity, that would have the same bottom line effect as making your energy bill zero. Since, however, the effect we see is not 0.6% but about 6% to 16%, there are one to one-and-a-half orders of magnitude greater bottom line benefits from labor productivity than from the energy savings themselves, even if the energy savings were 100%.

Are there other rewards that you think companies addressing sustainability will experience — regardless of their angle of entry?

Anybody who runs such a company is likely to tell you that their biggest win is in

recruiting, retaining and motivating the best people. And ultimately, competition is over talent, so this is a huge deal.

And it's not just about, say, BP out-recruiting Exxon. Take an example like Wal-Mart, which you would perhaps not normally think of in terms of talent competition; it's not like a high-tech or financial services company. And yet, once the associates realized that what the company was up to and what they were being personally invited to take responsibility for would make their communities better and their families healthier and give more meaning to their lives, they grabbed the initiative with such enthusiasm that one of the officers in charge of the greening of Wal-Mart told me about a year ago, "It feels like I'm hanging on to a few hairs coming out the end of the tail of a powerful tiger that's bounding off in all directions; I'm hanging on for dear life trying to learn fast enough to steer this critter that we have somehow mobilized beyond our wildest dreams."

Those are internal organization benefits. What have you seen happen to a business's external relationships?

They gain an obvious advantage simply from this: If you want to succeed in any business, you have to be the kind of business people want to do business with and feel good about. Conversely, if you screw up, especially environmentally and increasingly now in social issues, you will lose your franchise, your social license to operate, and then you're dead. That's why some of the sagest executives have long been far more worried about networked activists than about regulators.

You keep painting a picture of competitive benefit to sustainability-related strategies. Which means we have to keep asking, what prevents organizations from adopting them? You've already mentioned the odd combination of zeal and patience that any sort of major change requires, and we've explored the challenges of the business case. What else gets in the way?

Arrogance. A culture that's hermetic and not properly permeable to outside ideas — especially if the ideas come from people who are “different” or are ideas that people in the organization disagree with. It's a way of learning. If you're open to learning and if it's wrong, you've got to understand why you think it's wrong rather than just assuming it must be wrong because that person said it. There's a line I love from Judy Brown, in *A Leader's Guide to Reflective Practice*, that proposes we ask ourselves whenever we fail to connect with someone, “What is it about me that makes me unable to learn from this person?”

Or as my wife Judy's late father, an ex-Marine, used to say in his later years, “I don't like that man. I must get to know him better.”

What's an example of how those “mind-set” barriers keep businesses from seeing their opportunities or threats?

I'm having this difficulty at the moment working with senior people in the nuclear power industry. I'm trying to help them understand who their competitors are, who supply more energy than they do and are growing tens of times faster because they're cheaper and have less financial risk, but the nuclear industry's theology says these are not real competitors; they're not legitimate; they can't amount to much. And the nuclear vendors, on present form, will go to their commercial graves not realizing what did them in.

It's very sad that they can't acknowledge the reality of their competitors.

The power of accepted models?

Paradigms hold immense sway over our minds. We all struggle with this, but as my old mentor Edward Land used to say, “People who seem to have had a new idea have often simply stopped having an old idea. That's the hard part.”

But it's not just internal organization beliefs that block sustainability-related actions. You've talked often about system problems — such as in the energy or health care markets, among many — in which all the incentives are misaligned in ways that discourage efficiency. Do you believe that individual companies can achieve competitive advantage even when working against an ill-conceived system?

Absolutely. And a very important point.

Consider energy, where the incentives are pretty screwed up. My own view of a sound national energy policy is that all ways to save or produce energy should be allowed and required to compete fairly at honest prices, regardless of their type, technology, size, location or ownership. That is, of course, the opposite of the system we now have, which was purchased by the incumbents to reward their own activities and exclude competitors. We now have the best energy policy and the best political

system money can buy — if you believe in one dollar, one vote.

But customers are not simply stuck with the resulting offers from various monopolists and monopsonists. If you don't like the kind of officially sanctioned and subsidized energy supply you're offered, you can bypass the whole system by buying your own efficiency and, increasingly, renewables.

Are there particular organizational capabilities or attributes that you think companies need to cultivate in order to be able to capitalize on sustainability-related opportunities?

I've already mentioned humility. But a related idea is the understanding that you have to climb “Mount Sustainability” in patient steps, because as Interface's Ray C. Anderson says, the summit is really high and encased in swirling mists. So forget the peak, since it's scarcely visible. “We know which way is up,” he says, “and you get there a step at a time” — which I think is a much wiser approach than the usual hoopla.

And I guess another attribute would be vision across boundaries. If you're a company that sticks to its knitting, minds its own business and doesn't pay attention to what's happening in the world around you, you're probably riding for a fall and missing some big business opportunities, because in any business I can think of — including all of them in the 30 sectors we've worked in so far — it's the hidden connections between your business and *other* opportunities that you think are well outside your boundaries that create extraordinary opportunity or risk, depending on the way you handle them.

This is another way of saying that you need a really wide-angle lens. You can still have a sharp focus, but you sure need peripheral vision.

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