

The background of the cover is a light green grid with various numbers and dollar signs scattered across it. A man in a dark suit and blue tie is walking from left to right, carrying a black briefcase. He is standing on a stone wall. To his left, there are green wind turbines and a bush. To his right, there are black silhouettes of oil pumps. A stream of orange coins is falling from his hand. The title is in a large, bold, green font, and the subtitle is in a smaller, bold, red font.

Creating a Lean and Green Business System

Techniques for Improving Profits and Sustainability

Keivan Zokaei • Hunter Lovins
Andy Wood • Peter Hines



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A PRODUCTIVITY PRESS BOOK

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Foreword by Jonathon Porritt

All is not well with the world. The bad things (such as accelerating climate change, social injustice, resource shortages and so on) are getting worse faster. And the best efforts of those seeking to address those bad things are falling ever shorter. Any assumptions we might once have had as to how we get out of this mess are proving to be pretty much worthless.

Let's just test one of those assumptions: that it is elected governments (with their democratic mandates) that are best placed to broker a fairer balance between the interests of people today and the interests of future generations. Sadly, that powerful idea of justice between generations (which lies at the heart of the most familiar of all the definitions of sustainable development: development that meets the needs of the present without compromising the ability of future generations to meet their own needs) would appear to be less available to us today than it was back in 1992 at the time of the Earth Summit in Rio de Janeiro.

We know that because of what happened at the Rio+20 Summit in June 2012. Here we witnessed 190 world leaders, in the same place at the same time, committing their governments to a communiqué that is exceptional only in its vacuous banality. However uncomfortable it may be, we have to be honest in recognizing the implications of the Rio+20 fiasco: almost all governments today are either incapable or unwilling to take the lead on establishing the basic conditions for a more sustainable world, and will always prefer their own short-term interests and those of their voters over the hard graft of negotiating a more sustainable economy.

Worse yet, because the United Nations (UN) is essentially a creature of those same dysfunctional governments, it too has proved to be incapable of taking such a lead.

In this contested territory of intergenerational justice, governments have essentially opted out of leading their electorates and have settled for following those who are still prepared to do more of the heavy lifting—from whichever sector they may come.

There was one symbolic manifestation of all this at the Rio+20 conference, concerning the Consumer Goods Forum (CGF)—a coalition of more than 40 global retailers and fast-moving consumer goods companies. The CGF was extremely active in the run up to Rio in getting its members to commit to sourcing strategies that would help to protect the world's remaining rainforests.

This was a voluntary initiative, to be sure, and therefore, like all such voluntary initiatives, unenforceable. But this one has real substance and was well received, both by NGOs (nongovernmental organizations) and by the business community at large. Governments were also supportive, given how little success they've had to date in protecting those rainforests.

Indeed, about the only vaguely useful thing the US government did during Rio+20 was to commit publicly to supporting those companies in whatever initiatives they now take to honor the CGF's voluntary commitment! Why do something yourself (in government) when you can get others (in business) to do it for you?

I believe this “governance shift” (with governments stepping back and business stepping forward) is both crucially important and deeply problematic. It's hard to say whether it's a “good thing” or a “bad thing” in terms of getting our economies onto a more sustainable path. But I have to admit that my intense apprehension at the prospect of profit-maximizing multinationals taking on more and more responsibility, without so much as a sliver of democratic accountability, is outweighed by my increasingly urgent desire to see anybody step up to the plate.

These governance issues form an important part of the hinterland behind *Creating a Lean and Green Business System*, which looks closely at the role of progressive companies in rising to today's sustainability challenges. It provides a sharp, evidence-based celebration of some of the best companies out there today, who are contributing more than their fair share to the pursuit of a more sustainable world.

Much of this is often captured under the notion of “the business case for sustainable development,” first elaborated by the World Business Council for Sustainable Development in the run up to the Rio Earth Summit twenty years ago.

The true significance of that business case (i.e., things that are good for business as well as good for people and the planet) is highlighted throughout. Take the case of DuPont, which committed itself to a 65% reduction in greenhouse gas emissions over a 10-year period up to 2010, netting the company billions of dollars every year through energy efficiency savings. In 2007, that savings was \$2.2 billion—a year in which its total declared profits were not much more than \$2 billion!

No surprise then that those companies that are recognized leaders in ESG (environment, society, and governance) issues have regularly outperformed the MSCI (Metals Service Center Institute) by more than 20% since 2005.

But the authors of this book remind us that there's so much more to the business case than simply cutting costs to protect the bottom line. Indeed, they suggest that those companies that obsess about waste and cost reduction, to the exclusion of all else, will *never* secure the profound cultural change inside their companies on which true corporate sustainability increasingly depends. For them, being lean and truly green is not just about the dollars saved, but about “continuous value enhancement for the whole of society.”

All the case studies are carefully designed to promote that kind of shared learning. The Toyota case study is particularly compelling, not least because so many people would appear to have seized on the cost-cutting aspects of the Toyota Production System without properly understanding the cultural context in which those efficiency gains have been achieved.

That context is all important. For instance, while dependent on automation (as *all* car manufacturers have been for years), Toyota talks more about *autonomation*, ensuring that employees are not subjected to mindless repetitive tasks and are fully engaged in both the design and the monitoring of the Toyota Production System.

The authors were particularly struck by Toyota's use of the notion of *Monozukuri*—manufacturing in harmony with nature and adding value for society—or, as the authors put it, “the older sister of sustainable manufacturing.” *Creating a Lean and Green Business System* is therefore as much about culture, values, and system change as it is about efficiency and the bottom line. And that kind of emphasis provides some important insight into the broader debate about the role of business in society today. The kind of values orientation highlighted in most of the case studies and examples is what builds trust between those companies and their customers—and that kind of trust is essential as business takes on a

more and more significant role in mapping out the path to a more sustainable world.

Jonathon Porritt

Founder Director of Forum for the Future

<http://www.forumforthefuture.org>.

Foreword by Doc Hall

About 20 years ago I noticed that many of *IndustryWeek's* best plant applicants in the United States showed reductions in energy usage and material usage. Few mentioned any serious environmental program, but they were seriously into lean transformation. This made sense. Reductions came from eliminating unnecessary space, material handling, and rework, thus reducing materials scrapped and the energy to process it. Water usage was not measured. As the years progressed, these trends became more noticeable.

In the past ten years, a few companies began blending green into their lean. The most persistent ones had results similar to companies documented in this book. Unfortunately, we also noticed a silo effect, inside companies and in general. Lean programs and environmental programs were usually separate organizational silos that sometimes came into conflict with each other. Attempts to expand the impact by getting more lean leaders and environmental leaders to work together gained very little traction.

Creating a Lean and Green Business System updates similar initiatives and proposes how to move forward. It has a framework, an overview of tools, and case studies showing how companies can not only reduce environmental footprints, but also improve service to customers at the same time. This is a happy confluence. If costs go down and customer satisfaction goes up, good business results will follow.

Far too many general managers have not figured this out. It is counter-intuitive to old business models forged from a financial view; surely paying to clean up a mess will cost more. Of course it does, if that is as far as the thinking goes. However, operating so as to prevent messes reduces cost; neither the company nor anyone else has to clean up something that didn't happen. Avoiding future messes both reduces present costs and minimizes future liabilities, many of which we cannot foresee.

"Accounting thinkers" cannot easily grapple with this. Transaction systems do not measure things that did not happen. Accounting can only project the

value of preventing something from happening if somebody hangs a price tag and probability on consequences. (Business in general is not hopeless in this regard. Insurance companies attach a value to many foreseeable calamities.)

Business leaders fear this emerging world if they do not know what to do. Prior experience teaches them to identify only value at risk—events that they can foresee and quantify that could affect their profit and loss statements. Flocks of “black swans” out on the horizon defy conventional risk analysis. Hence, they tend to be ignored for practical purposes.

Stop being afraid and seize new opportunities. *Creating a Lean and Green Business System* is a good guide on how to start—and keep going. Companies that ignore both lean and green had better have a monopoly with a big margin to cover the waste financially. That in turn begs a further fundamental question—whether the entire business is merely waste that is financially viable at the moment. All businesses have limited lifetimes. If they ignore their own long-term health as well as ours, lifetimes are more likely shorter.

None of the example cases represent an ideal attainable state. All cases end with lessons learned and caveats that the organization can still do much more. An ideal of zero human impact on the planet is impossible. We must get much closer to zero, but all humans and other living creatures consume resources and exhale carbon dioxide just by being here. We are symbiotic with our environment, which is ever changing. All our present states are temporary. All our proposed future states are movable targets. New problems and challenges will emerge. All we can do is try to create a good quality of life using minimal natural resources, while keeping the world in a “Goldilocks Zone” in which all can flourish.

Such goals require developing a mindset very different from business as usual. This book supplies a roadmap to begin that transition. Digest it carefully, bearing in mind that human values transitions are more challenging than technical ones. Our technologies and techniques are beyond the dreams of our forefathers, and we are capable of devising many more. But our tough transition is fully grasping our symbiosis with our environment, repurposing our objectives for applying them. We work for more than our customers; we work for everything and everybody.

So sail on with your unending voyage of discovery. Help us leave our “global farm” in better shape than we found it. As the cases illustrate, once dedicated to the challenges, what we can do is amazing.

Robert W. “Doc” Hall

Chairman, Compression Institute

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All the proceeds of this book were dedicated to charitable organizations.

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Keivan has also been an advisor to the auditor general in Wales on how to improve public services and has advised different European governments on the principles of lean and systems thinking as well as publishing a number of key reports commissioned by governmental or industrial bodies. He is a regular speaker at different international conferences and engages with both Lean professionals and general business executives through public media including appearances on BBC.

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Over her 30 years as a sustainability thought leader, Hunter has written hundreds of articles and 13 books. Her latest, *The Way Out: Kickstarting Capitalism to Save Our Economic Ass* (2012), is a sequel to her international best-selling, *Natural Capitalism*, now used in hundreds of college courses.

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Hunter has won dozens of awards, including the European Sustainability Pioneer award, the Right livelihood Prize (the alternative Nobel) and this year the Rachel Carson Award. *Time Magazine* recognized her as a Millennium Hero for the Planet, and *Newsweek* called her the Green Business Icon.

Andy Wood joined Adnams in 1994 with responsibility for developing its customer service and supply chain operations. He joined the board in 2000 with the additional responsibility of sales, marketing and the wine business. He became managing director in 2006 and chief executive in 2010. Andy has an MBA, a doctorate from Cranfield University and in 2010 he was awarded an honorary doctorate from Anglia Ruskin University.

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He has undertaken extensive research into Lean thinking and supply chain management and has pioneered a number of key concepts, methods and applications in Europe and Australia, including supplier associations, value stream mapping and the Lean business system. He has written or co-written several books including *Creating World Class Suppliers* published by Pitman in 1994, *The Lean Enterprise* published by AMACOM in 1997, *Value Stream Management* published by Financial Times Prentice Hall in 2000 and *Staying Lean* first published in 2008 which won a Shingo Research and Professional Publication Prize Recipient for 2009.

Peter is chairman of S A Partners, a specialist consultancy organization that assists companies to apply Lean. S A Partners has grown rapidly to over

50 employees working with large multi-national firms such as Corus (Tata), Wartsila, Mars & Arla together with many smaller companies. It now has operating companies in the UK, USA, Ireland and Australia.

WHY LEAN AND GREEN?

I

Chapter 1

Introduction

Creating Leaner and Greener Companies

In 2003, a report published by the U.S. Environmental Protection Agency (EPA) said: “There is a strong and growing network of companies implementing, and organizations promoting, lean across the U.S. [and the rest of the world]. For those companies transitioning into a lean production environment, EPA has a key opportunity to influence their lean investments and implementation strategies by helping to explicitly establish with lean methods environmental performance considerations and opportunities. Similarly, EPA can build on the educational base of lean support organizations—non-profits, publishers, and consulting firms—to ensure they incorporate environmental considerations into their efforts. As several lean experts suggested, efforts to ‘paint lean green’ are not likely to get far with most lean practitioners and promoters. Instead, public environmental management agencies will be better served by being at the table with practitioners and promoters, seeking opportunities to fit environmental considerations and tools, where appropriate, into the context of operations-focused lean methods.”¹ Nearly a decade later, unfortunately, this has largely not happened. We believe this is a missed opportunity, not just by governmental organizations, but more importantly by the business community. The economic recession is hardly an excuse and, in fact, should drive businesses to put resource efficiency and environmental protection on the top of their agenda.

Numerous companies around the world, large and small, have embarked upon some sort of continuous improvement journey, while few have begun to really see the opportunities that lie on the boundaries between economic