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978-1-107-07279-4 - Innovations in Sustainability: Fuel and Food

Alfred A. Marcus

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Innovations in Sustainability

To what extent can competition between companies encourage innovations in sustainability that have the potential to solve some of the world's major challenges? Using a series of case studies, this book pits closely related competitors against each other to examine the progress in and obstacles to the evolution of sustainable innovations in energy efficiency, solar power, electric vehicles and hybrids, wind energy, healthy eating, and agricultural productivity. It delves into the efforts of Tesla Motors to bring about a revolution in personal transportation, and the challenges Toyota and General Motors (GM) confront in commercializing hybrids. It explores the movement to healthy food by cereal companies General Mills and Kellogg's, and depicts the battles between Whole Foods and Walmart for the world's palate. By examining the experiences that particular businesses have had with sustainable innovation, this insightful book reflects upon lessons learned and encourages readers to think carefully about the challenges that lie ahead.

ALFRED A. MARCUS is the Edson Spencer Endowed Chair in Strategy and Technological Leadership at the Carlson School of Management and at the Technological Leadership Institute (TLI) College of Science and Engineering, University of Minnesota. He has published in numerous academic journals and he is the author or editor of 15 books on strategic management, business ethics, and green business. His current research focuses on sustainable innovation and cleantech venture capital.

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The increasing attention given to environmental protection issues has resulted in a growing demand for high-quality, actionable research on sustainability and business environmental management. This new series, published in conjunction with the Group for Research on Organizations and the Natural Environment (GRONEN), presents students, academics, managers, and policy-makers with the latest thinking on key topics influencing business practice today.

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Innovations in Sustainability

Fuel and Food

ALFRED A. MARCUS

University of Minnesota



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Frontmatter

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*For Judy,
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Frontmatter

[More information](#)

Contents

<i>List of figure and tables</i>	<i>page</i> ix
<i>Foreword</i>	xii
<i>Acknowledgments</i>	xv
Introduction: the path to sustainability	1
Part I Funding sustainable startups	
1 Leaders of the pack: Khosla Ventures and KPCB	13
2 Scaling up: Intel Capital and Google Ventures	50
Part II Business models	
3 Follow the sun: First Solar and Suntech	87
4 Making a revolution: Tesla and Better Place	110
Part III The macroenvironment and industry context	
5 Ticket to ride: Toyota and General Motors	147
6 Blowing in the wind: Vestas and General Electric	171
Part IV Finding customers	
7 Carrying that weight: General Mills and Kellogg's	203
8 Bridge over troubled waters: Pepsi and Coca-Cola	226

Cambridge University Press

978-1-107-07279-4 - Innovations in Sustainability: Fuel and Food

Alfred A. Marcus

Frontmatter

[More information](#)

viii

*Contents***Part V Competition between mission and non-mission based businesses**

9	Consensus capitalism: Whole Foods and Walmart	259
10	Sustainability's next frontier: DuPont and Monsanto	296
	Concluding observations: the journey continues	332
	<i>Index</i>	348

*Figure and tables***Figure**

- 1.1 Clean energy venture deals and US \$s invested, 1995 to 2012 (United States) page 17

Tables

- | | |
|--|-----|
| 0.1 Sustainable innovation: evolutionary stages | 6 |
| 1.1 Returns to clean energy and other VC investment categories, 2002 to 2006 | 18 |
| 1.2 Khosla Ventures and KPCB participation in clean energy deals, 2004 to 2013 | 24 |
| 1.3 Wind startups in need of funding | 45 |
| 1.4 Status of Khosla Ventures' and KPCB's clean energy deals, 2013 | 48 |
| 2.1 Intel Capital's and Google Ventures' clean energy deals by category, 2014 | 55 |
| 2.2 Status of Intel Capital's and Google Ventures' clean energy deals, 2014 | 56 |
| 2.3 Bankrupt or acquired thin film CIS/CIGS solar cell manufacturers | 74 |
| 3.1 The decline in Chinese solar shipments to the United States, 2011 to 2013 | 88 |
| 3.2 A comparison of First Solar and Suntech's financials, second quarter 2014 | 94 |
| 4.1 Can Tesla achieve a break-even point with its proposed Model E? | 111 |
| 4.2 United States' luxury car sales, 2013 | 122 |
| 4.3 Tesla's financials compared to those of other major automakers, July 2014 | 123 |
| 5.1 Largest oil reserves and producers in 2014 | 151 |

5.2	Market share of US-sold hybrid electric vehicles, 1999 to 2013, by manufacturer	159
5.3	Sales of US hybrid electric vehicles by manufacturer, 1999 to 2013	160
5.4	The efficiency of hybrid electric vehicles: US Environmental Protection Agency 2014 ratings	161
5.5	Plug-in hybrid electric vehicles: sales, efficiency, and battery range by manufacturer, 2014	165
6.1	Wind power revenue global change, 2002 to 2014	172
6.2	Wind power company global market share, 2010 to 2013	173
6.3	Vestas' and GE's financials compared, July 2014	174
6.4	Levelized energy costs for electric power production alternatives, 2012	176
6.5	Megawatts of installed wind production capacity in 20 countries, 2003 to 2013	180
6.6	Percentage megawatt growth in wind capacity in four continents, 1999 to 2013	182
6.7	Global market share of top five Asian wind power firms, 2010 to 2012	183
6.8	Global wind power firm attrition	184
6.9	Location of Chinese wind power generating capacity, 2012	185
6.10	Wind power jobs	190
7.1	Hunger and overnutrition: the twin problems in 2010	204
7.2	The financials of General Mills, Kellogg's, and Nestlé, August 2014	206
7.3	Revenue changes in the ready-to-eat cereal industry, 2000 to 2013	207
7.4	Environmental, social, and governance scores for US food companies	208
7.5	Healthiest and unhealthiest breakfast cereals	217
8.1	Beverage category growth in value and volume consumed, 2008 to 2013	229
8.2	Major world tea markets, 2008 and 2013	230
8.3	Company market share in tea in Asia, 2008 and 2013	231
8.4	Major sports and energy drink markets in the world, 2008 and 2013	232
8.5	Bottled water consumption in developing countries, 2008 and 2013	233

Cambridge University Press

978-1-107-07279-4 - Innovations in Sustainability: Fuel and Food

Alfred A. Marcus

Frontmatter

[More information](#)

<i>List of figure and tables</i>	xi
8.6 United States' bottled water revenue growth, 2000 to 2013	233
8.7 Major world juice markets and market share, 2008 and 2013	235
8.8 Coca-Cola and Pepsi global market share in carbonated soft drinks, 2008 and 2013	236
8.9 Global market share in snack foods, 2008 and 2013	237
8.10 Global and US snack food sales, 2008 to 2013	238
8.11 Soda drink market share in India, 2008 and 2013	244
8.12 Soda drink market share in Mexico, 2008 and 2013	245
8.13 Change in soda drink consumption in select Muslim countries, 2008 to 2013	247
8.14 Soda drink market share in select Muslim countries, 2008 and 2013	248
8.15 Beverage company financials compared, July 2014	254
9.1 Quarterly revenue growth and other financial indicators of major food retailers, August 2014	261
9.2 Sustainability scores of major food retailers, August 2014	264
9.3 Revenue growth in the retail food industry, 2000 to 2013	271
9.4 Comparative prices of organic food sold at Walmart and at other supermarkets	274
10.1 Benefits and controversies about genetically modified products	306
10.2 Major divisions of Monsanto, Syngenta, and DuPont, 2006	317
10.3 Agriculture chemical company financials compared, August 2014	322
10.4 Sustainability scores of major chemical companies, September 2014	322
10.5 DuPont's segments, products, markets, and sales, 2013	324

Foreword

The relationship between business and the environment has become extremely popular. Amazon lists 22,500 books under the heading “sustainable management” and 80,000 titles under “environmental management.” There are of course many reasons why so many books on these topics are being published. One is that many firms are finding themselves under substantial pressures from government, consumers, employees, and the general public to improve their environmental performance. They want and need guidance as to how to accomplish this – information that such books provide.

A second reason is that a growing number of executives and investors have become persuaded that there are substantial business opportunities associated with becoming more sustainable. The very term “sustainable management” represents an effort to link improved environmental performance with long-term growth and profitability. Thus a “sustainable company” is one that has successfully managed its long-term ecological impact in a way that also assures its future financial viability, with the two goals reinforcing one another.

The claim that becoming “greener” can make a firm more profitable dominates writing on sustainable management. What makes this claim credible is that many firms have financially benefited by becoming more sustainable. As this book demonstrates, venture capital firms have prospered by investing in clean energy, investments in solar and wind power have proven profitable, there is a market for more fuel-efficient vehicles and other environmentally friendly consumer products, and many consumers want to purchase healthier food.

The stories of such business successes are certainly inspiring. But what is less clear is what lessons they have to teach. For by only highlighting “win–win” stories, the literature on sustainable management often winds up making it look too easy – just because some firms have made profitable green innovations does not mean that other firms

Cambridge University Press

978-1-107-07279-4 - *Innovations in Sustainability: Fuel and Food*

Alfred A. Marcus

Frontmatter

[More information](#)*Foreword*

xiii

can successfully do so. Equally important, focusing on green business successes overlooks the equally valuable business lessons from firms whose green innovations have proven disappointing.

What makes *Innovations in Sustainability* a truly innovative book is Alfred Marcus's ability to integrate his extensive knowledge of sustainable management with a sophisticated understanding of corporate strategy. As he notes in his introduction, green innovations are most usefully understood as a strategic choice. Like any corporate strategy, they involve uncertainty, or predictions about the future that may or may not prove valid. This is especially true to the extent that their successful achievement often depends on favorable public policies.

The case studies in this book are not only exhaustively researched, but they place each of the firms whose experiences they describe in a broader context. Marcus' detailed case studies enable us to clearly understand the several choices each of these firms made over time, how they affected one another, and what they have and have not accomplished – both financially and environmentally. They clearly demonstrate why the path to sustainability is so challenging and complex – in essence no different than any other corporate strategy.

By ending each chapter with a series of questions that highlight the strategic choices that now confront each firm, Marcus reminds us that sustainable business objectives are never achieved. Rather they represent an ongoing challenge; the path to profitable sustainability is an endless one. Just because a firm has succeeded in financially benefiting from green innovations in sustainability in the past or present does not mean that it will also be able to do so in the future.

Another feature that distinguishes this book from other studies of “green” business is its sophisticated recognition of the importance of the competitive context. By organizing its chapters in a way that pairs each company with a similar or comparable one, Marcus reminds us that green business strategies do not occur in a vacuum. A sustainable company must not only succeed on its own terms: its success often requires it to be *better* than its competitors. Students of business strategy understand this, but too many of those who write about successful green business strategies do not.

Innovations in Sustainability covers an enormous amount of ground; while it is organized around individual firms, few dimensions of current

Cambridge University Press

978-1-107-07279-4 - Innovations in Sustainability: Fuel and Food

Alfred A. Marcus

Frontmatter

[More information](#)

xiv

Foreword

environmental concerns fall outside its scope. It makes fascinating reading and represents an original and much needed contribution to our understanding of the challenges facing sustainable innovations.

David Vogel

University of California, Berkeley, CA

Cambridge University Press

978-1-107-07279-4 - Innovations in Sustainability: Fuel and Food

Alfred A. Marcus

Frontmatter

[More information](#)

Acknowledgments

I thank J. Alberto Aragon-Correa and Jorge Rivera, editors of this series, who urged me to write this book and Cambridge University Press' anonymous reviewers for their input. In studying sustainability and sustainable innovation my primary inspiration comes from the co-authors of the academic papers with whom I have been recently working: Ari Ginsberg of NYU, Adam Fremeth from the Ivey School, Mazhar Islam at Drexel, Joel Malen at Hitotsubashi University Institute of Innovation Research, Sue Cohen at the University of Pittsburgh Katz School, and Shmuel Ellis and Israel Drori at the Tel Aviv University Business School.

James Balch, a Carlson School MBA student, provided me with ongoing information about clean energy topics. His passion for the topic was immense. He is an indefatigable helper whose enthusiasm for the topic was infectious. I obtained much of the data that I use in the first two chapters in the book from the Cleantech Group, a market intelligence, events, and advisory services organization in San Francisco. Throughout the book I relied heavily on Greentech Media, an Internet-based information center. Euromonitor was the source of some of my information, especially about the beverage industry. CSRHub was a good source of information on corporate social responsibility.

I owe a large debt to the Carlson School where I have taught for over 30 years. All the Department of Strategic Management and Entrepreneurship members deserve mention but I will refer to just a few department members because of their outstanding contributions to matters related to the topic of this book: Andy Van de Ven for his work on innovation, and Shakher Zahra and Harry Sapienza for their work on venture capital (VC).

David Vogel, editor of the *California Management Review* and faculty member at the Haas School of Business at Berkeley, has shown that he understands well my purpose in writing this book. Other colleagues

in organizations and the natural environment with whom I am close and whose work I appreciate a great deal are Sanjay Sharma, Dean of a very innovative MBA program at the University of Vermont, Magali Delmas of UCLA, Rebecca Henderson and Michael Toffel at the Harvard Business School, Mark Starik at San Francisco State, Michael Russo at the Lundquist College at Oregon, Tim Hargrave who now teaches at Simon Fraser, Frances Bowen at Queen Mary University of London, Volker Hoffman at ETH Zurich, Stefano Pogutz at Boconi, Paul Shrivastava at Concordia University Montreal, Dror Etzion at McGill, Jonthan Pinkse at Grenoble, and Rolf Wustenhagen and Jorg Grimm at St. Gallen.

As a past chairperson of the Organizations and Natural Environment Division of the Academy of Management, I owe the division a great deal. I also have been a regular attendee of the Group for Organizations and the Natural Environment meetings. I believe that it was at a session in the South of France that the prospect that I might write this book first gained traction. The organizations and natural environment community has expanded greatly over the years and if I have forgotten to mention anyone please forgive me.

The *California Management Review* and the journal *Organizations and the Natural Environment* are where some of the ideas found in chapters of this book first appeared. I wrote earlier cases on Pepsi, Coca-Cola, Monsanto, DuPont, and Walmart that appeared in *Winning Moves*, a book published by Marsh Press. Libby Rubinstein, a long time editor at McGraw-Hill, who ran Marsh Press, deserves some of the credit for my understanding of these companies.

Paula Parish has been a great editor at Cambridge University Press. I also appreciate the work that Claire Wood did on the book.

The real start for the writing of this book took place while I was teaching in the MBA program at the Technion. As I teach at Carlson, the University of Minnesota's Technological Leadership Institute, and at the Technion, I owe a great deal to the many different students for the fresh insights they have provided in the classroom. The University of Minnesota Management of Technology students have been especially perceptive in what they have taught me about innovation.

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Cambridge University Press

978-1-107-07279-4 - Innovations in Sustainability: Fuel and Food

Alfred A. Marcus

Frontmatter

[More information](#)*Acknowledgments*

xvii

Without a doubt, my family has been a great source of pride and support as I wrote this book. My wife Judy, a social worker by profession, is my life partner of over 40 years. I am grateful for her love, support, and especially for her patience, as the writing of this book took on great importance and often was my first priority. My sons have reached the age where I consider them intellectual peers who regularly share their wisdom with me. The older son, David, recently was appointed co-editor of *Dissent Magazine*. He also is finishing a PhD in American intellectual history at Columbia. My younger son, Ariel, works as an analyst at Spotify. He formerly worked at the *NY Times* and Linked-in. His knowledge of the Internet is unparalleled. My family is made up of humanitarians who regularly do good works. I hope they appreciate the challenges to humanity I address in this book.