

CORPORATE WATER STRATEGIES

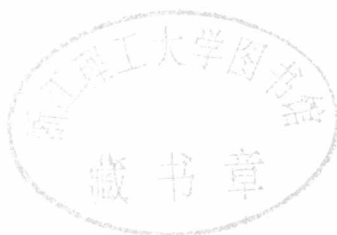
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Corporate Water Strategies

William Sarni



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This book is dedicated to the memory of Gary Bryner PhD,
a friend and colleague who inspired me during the early days
of my career in sustainability and who left a legacy of
innovative thinking, collaboration and leadership.
His contributions to advancing the economics and public
policy of environmental, energy and climate change were
only outshone by his humanity and generosity.
I am fortunate to have worked with Gary and to have
shared good times as we worked to evangelize
sustainability before it was mainstream.

Foreword

Tamin Pechet

CEO of Banyan Water and Chairman of Imagine H2O

When did you last think about water? Maybe water crossed your mind when you asked a waiter for a glass, waited for the shower to get hot, or dreamed of a beach vacation. But when did you last consider how water affects your life or your business?

Our most basic, precious and irreplaceable resource usually escapes our daily thinking. Water travels underground in an intricate system of pipes and pumps, and depending on your location, magically arrives at the taps of your home or business when and how you need it. In many places, the drop of water you need and the service to provide it carry a price so cheap you might not see or pay attention to your bill.

In fact, the chances are that you think about water only when there's a problem. As the saying goes, a plane that lands safely doesn't make a great story. Yet, when a water problem arises, everything stops. With the world's water challenges growing in frequency and severity, individuals, businesses and governments must now recognize, adapt to and address water needs.

What does a water problem look like? First, imagine you don't have enough water. Water scarcity affects one in three people on every continent,¹ from landowners who can't secure enough water rights to build homes in Boise, Idaho, to residents in Uganda who travel several hours a day to carry water to their homes.² Now, picture enough water in one place, but a system struggling to transport that water to points of use. Water infrastructure is crumbling globally, from breaks in water mains leaving residents of Boston on boiled-water alerts, to traffic jams in Washington, DC, to sewer spills in San Diego, California. There are almost a quarter of a million breaks in water mains each year in the US alone.³ If you have enough water, and it reaches you when you need it, do you know what's in that water? Water quality is a daily concern for families from California's

San Joaquin Valley to urban Bangladesh. Globally, a child dies from a water-related disease⁴ every 15 seconds. Even now, millions of Americans drink unhealthy water.⁵ Finally, once water is used, where does it go? Used water must be treated, and either recycled or released back into the environment. Wastewater pollution is a top global environmental concern, and even today we are discovering new chemicals with unknown impacts in our wastewater streams.

The impact of these water challenges ripple through a society. Not only individuals, but governments and businesses also need to think about water requirements. Sufficient water, delivered in the requisite form and quality, is a business imperative. Yet, today, even some of the best-managed multinational companies are woefully unprepared to deal with water challenges, or the business opportunities they might present.

A few years ago, a renowned water resources attorney told me that the water industry wasn't desperate for an influx of innovative thinking. People had been purifying and moving water since the Egyptians, and we'd grown pretty good at it. That's true, but one need only look at the water problems we face right now to see how much better we can do. Where will we find new ideas, strategies and solutions? With only about 1 per cent of venture capital currently funding innovation in water, a variety of stakeholders, including entrepreneurs, government agencies and big businesses, need to develop new solutions to our water needs.

Fortunately, water is quickly becoming an important item on the general corporate agenda. The water industry itself, selling products and services to meet water needs, is already a half trillion dollar market. A variety of journalists and investors have called water 'the next gold'. The analogy serves a purpose. Like gold, water as a commodity carries commercial promise. But unlike gold, water is rarely measured or properly valued. Moreover, water poses as many risks as rewards.

Multinational companies depend on water as an input, and bear responsibility for its use as a resource. For some of them, this is easy to see. Beverage companies depend on water as the largest input for their products. For other major companies, the link is less direct, but no less crucial. Water is the critical variable in agricultural production. Yet most growers depend on their experience to estimate how to water crops, rather than using advanced measurement and control of water absorption to guide irrigation. Energy companies are among the biggest corporate water users. Electronics and pharmaceutical companies require specially treated

ultra-pure water in their production processes. The challenges in supply, delivery and quality that affect individuals also pose a constant risk to the corporate community.

There is incredible potential mixed with the risks and problems of a water system. The pressures now transforming how we simultaneously think of and manage water present inspiring leadership opportunities. Innovation to address water needs, and thoughtful management of water as a resource, offer incredible opportunities to improve our personal health, and the health of our environment and our economy. It is hard to imagine a company today that does not have an energy policy and strategy. Soon we will think similarly about corporate water strategy.

This book provides a roadmap for companies committed to building a global water stewardship programme. Such a programme can assist companies in managing their physical, reputational and regulatory water risks. Moreover, for those forward-looking innovative companies it can provide a framework for developing new products and services, and a competitive advantage.

Notes

- 1 www.who.int/features/factfiles/water/en
- 2 <http://hdr.undp.org/en/reports/global/hdr2006/>
- 3 www.nytimes.com/2009/04/18/us/18water.html
- 4 <http://water.org/learn-about-the-water-crisis/facts>
- 5 www.nytimes.com/2009/12/17/us/17water.html

Introduction

Nothing in the world is more flexible and yielding than water. Yet when it attacks the firm and the strong, none can withstand it, because they have no way to change it. So the flexible overcome the adamant, the yielding overcome the forceful. Everyone knows this, but no one can do it.

Lao Tzu

Why Water and Why ‘Corporate Water Strategies’?

I started my career as a hydrogeologist for Geraghty & Miller, one of the premier groundwater consulting firms in the United States at the time. It was there I first learned about water as an important public health issue. My early career encompassed managing water-supply projects (finding sources of groundwater) and the clean-up of contaminated groundwater at large Superfund sites. As a result, my youthful perspective was that there was no shortage of water – we just needed to look harder – and that we could clean up contaminated groundwater by applying the right technologies.

These early days of my career are in stark contrast to the past 12 years, which have been focused on sustainability. My sustainability consulting practice progressed from brownfields remediation, to sustainable land use, to green building, to climate change and, ultimately, to water. I have come full circle in my career, but I now look at water in an entirely new way. It is no longer a plentiful resource to be exploited or cleaned up. Instead, water is a resource that is becoming scarce and requires ‘stewardship’.

This realization joined my long-standing belief that the private sector has the ability to quickly address big, complex issues. Water is such an issue (as are climate change, energy and land use), and the private sector is, indeed, addressing water as a critical business issue.

I also realized this story was not being told in an integrated fashion; hence my desire to write this book.

I was fortunate to have started with a foundational understanding of the technical aspects of water occurrence. In writing this book, I was also fortunate to have had access to thought leaders, and to companies that are addressing water as a critical business issue, as well as a public-policy and humanitarian challenge. The discussions I had with these professionals allowed me to explore their unique perspectives on water issues and solutions. The interviews and company ‘snapshots’ included in this book represent their stories, essentially in their own words, and provide valuable insight.

This book is a call to action for every company to move towards water stewardship and constructively engage all stakeholders in crafting 21st-century solutions to managing water sustainably. Moreover, it is a call for the public and private sectors to value water and integrate water stewardship into energy and climate policies and actions.

Acknowledgements

The more I write, the more I realize it is an impossible endeavour, without the help and support of many. There was no shortage of friends, family and colleagues who provided constant encouragement and support as the manuscript progressed.

I will never be able to find the words to adequately thank my wife, Maureen Meegan, who provided endless support and encouragement to take on the project and keep writing. She sacrificed precious weekends while I worked on the manuscript and I could not have written this book without her.

My sons, James, Thomas and Charles continue to provide encouragement for me to write. They now understand what I do for a living and why I am passionate about sustainability – I am very proud of them. They were always the first ones to ask, ‘How is the book coming along?’ when they knew I was dragging a bit.

Thanks to my sister, Celeste, who is one of my most vocal supporters and is now hooked on sustainability and almost all things ‘green’; and to my parents, Josie and Mike, who instilled in me a love and curiosity for life, a strong work ethic and the belief that anything is possible. As always, thanks to the Aberman, Casey, Domijan and Zelkovich families, and to my nieces and nephews who provide ongoing encouragement.

My thanks also to Paul Aldretti, Lauren Hauptman, Jennifer Mich, Hillary Mizia, Kati Standefer, Deanna ‘Drai’ Turner, Jeffrey Weinberger and Andrew Winston for making significant contributions in helping me with the research, drafting and editing text, and preparing the graphics. Most importantly, they provided invaluable advice and perspective when it was critically needed.

My thinking about water strategies benefited enormously from my conversations with those who are working daily on addressing the global challenge of water scarcity. They were all generous with their time and support, and provided valuable insight into the way that multinational

corporations and non-profit organizations are managing water risks and creating business opportunities. Thanks, then, to: Kate Brass, Mark Stoler and Jeff Fulghum from GE; Robert Berendes and Paul Minehart from Syngenta; Adam D'Luzansky and Josh Gilder from the White House Writers Group; Kevin McGovern from The Water Initiative; Dave Stangis from Campbell; Lisa Quezada from MillerCoors; Andy Wales from SABMiller; Alex McIntosh (formerly with Nestlé Waters) from Ecomundi Ventures; Bruce Lauerma from Nestlé Waters; Roberta Barbieri from Diageo; Jill Cooper from Encana US; Bart Alexander and Michael Glade from Molson Coors; Michael Law and Beth Haiken from Ogilvy PR; Tom Cooper from Intel; Janette Bombardier and Jeff Chapman from IBM; Tina Taylor from EPRI; Gregg Wagner from Rio Tinto Minerals; Sue Cischke from Ford Motor Company; Brooke Barton from Ceres; Bill Brady from Exelon; and Lisa Manley and Jeff Seabright from The Coca-Cola Company.

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I also owe thanks to Don Smith from the University of Denver who was enthusiastic enough about the book idea to introduce me to his contacts at Earthscan; and finally to Tim Hardwick from Earthscan who provided the opportunity to write this book and offered guidance, encouragement and patience along the way.

Abbreviations

BIER	Beverage Industry Environmental Roundtable
BoP	base of pyramid
BSR	Business for Social Responsibility
CAP	Conservation Action Project
CCS	carbon capture and storage
CDP	Carbon Disclosure Project
Ceres	Coalition for Environmentally Responsible Economies
CESCR	Committee on Economic, Social and Cultural Rights
CSP	concentrated solar plants
CWP	Community Water Partnership
EIO-LCA	economic input-output life-cycle assessment
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
EPRI	Electric Power Research Institute
EU	European Union
GE	General Electric
GEM	Global Emissions Manager
GEMI	Global Environmental Management Initiative
GETF	Global Environmental and Technology Foundation
GHG	greenhouse gas
GIO	Global Initiative Outlook
GRI	Global Reporting Initiative
GROW	Global Roundtable in Water
GWP	Global Water Partnership
GWR	Global Water Roundtable
HSAP	Hermosillo Stamping and Assembly Plant
IFC	International Finance Group
IGO	intergovernmental organizations
IHP	International Hydrological Programme
IPCC	Intergovernmental Panel on Climate Change

IPO	initial public offering
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
IWMI	International Water Management Institute
LCA	life-cycle analysis
LEED	Leadership in Energy and Environmental Design
MDG	Millennium Development Goal
NGO	non-governmental organization
NRDC	Natural Resources Defense Council
OECD	Organisation for Economic Co-operation and Development
POD	point of drinking
POU	point-of use
PUB	Public Utilities Board
PUC	public utility commission
REDA	Rural Empowerment and Development Agency
SAM	sustainability assessment matrix
SRP	Salt River Project
TCCC	The Coca-Cola Company
ToP	top of pyramid
TRI	Toxic Release Inventory
TVA	Tennessee Valley Authority
TWI	The Water Initiative
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UPW	ultra-pure water
USEPA	US Environmental Protection Agency
UV	ultraviolet
WBCSD	World Business Council for Sustainable Development
WEF	World Economic Forum
WFN	Water Footprint Network
WHO	World Health Organization
WMI	Water Missions International
WRC	Water Restoration Certificates
WRI	Water Resources Institute
WTO	World Trade Organization
WWC	World Water Council
WWF	World Wide Fund for Nature

Contents

<i>Foreword</i>	<i>ix</i>
<i>Introduction</i>	<i>xiii</i>
<i>Acknowledgements</i>	<i>xv</i>
<i>Abbreviations</i>	<i>xvii</i>

Part I Key Issues for Business in Water Stewardship

1	The Global Challenge of Water and Why it Matters to Business	3
2	Global Issue with Local Solutions	30
3	The Disconnect Between Pricing and Value	53
4	Water Accounting: Water Footprint and Virtual Water	66
5	Partnerships and Stakeholders	83
6	Water Technology	103
7	Reporting, Disclosure and Leadership	131

Part II Developing and Implementing a Successful Corporate Water Strategy

8	A Water Strategy Map	149
9	Food and Beverage Industries	164

10	The Semiconductor Industry	199
11	Power Generation	211
12	Extractive Industries	223
13	Manufacturing	231

Part III The New Water Paradigm

14	Seven New Rules of 21st-Century Thinking	239
	<i>Index</i>	251

Part I

Key Issues for Business in Water Stewardship

When drinking water, remember its source.

Chinese proverb

