

clean

**Lessons from Ecolab's
Century of Positive Impact**

PAUL C. GODFREY WITH EMILIO R. TENUTA

WILEY

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To Robin, your love and support make me better every day.
–Paul

*To my wife Dawn and children Evan, Rachael and
Emilio Marco – My life, my love and my legacy*
–Emilio

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PREFACE

There are a thousand hacking at the branches of evil to one who is striking at the root.

—Henry David Thoreau

The lack of a sustainable economy stands as a great, perhaps catastrophic, evil of our time. Climate change roils communities, natural landscapes, and markets. Discrimination and social inequality fester like an open sore and stain our ideals of democratic societies and free markets, and questionable ethics and practices by prominent firms and leaders erode trust in business as an institution. Many well-intentioned business, civil society, and government leaders create products, processes, and programs to address the latest crisis of sustainability, desperately hoping that these one-off approaches will move the dial on creating a more sustainable world.

Most of these efforts represent “hacking at the branches,” however, because the roots of sustainability lie out of view, they represent the outcome of long chains of cause-and-effect relationships, and require a different mindset to strike at them. Unless leaders identify the root causes of the lack of sustainability, they’ll remain focused on the branches and churn out more temporary solutions. They’ll fail to make a lasting, positive impact. How can we help leaders identify those root causes and move toward real solutions? By finding successful businesses that strike at the roots and adopting the core principles that guide them.

This book presents a case study of Ecolab, a company that’s been building a truly sustainable world for a century. My first exposure to Ecolab came in 2017. I was consulting for a multinational industrial water company to assess the strength of its competitors. They really wanted to know about Nalco Water, a subsidiary of the Ecolab corporation. They knew Nalco was good, and the more I learned, the more I shared their respect for the company. Nalco created great products, went to market with a strong value proposition centered on sustainable water management, and

enjoyed industry leadership. I wanted to get a personal take on Nalco's competitive goals and vision for the future, so one Friday morning in June 2017 I dialed the corporate operator at Ecolab and asked to speak with someone who might know about "sustainability at Nalco." I prepared myself for the inevitable trip to the dead letter box we know as voice mail.

Emilio Tenuta, then vice president of Sustainability at Ecolab, answered his own phone. That never happens in corporate America. Never. We had a *great* conversation. Three things impressed me.

First was Emilio's fundamental kindness; he took a call from a total stranger and spent the better part of a half-hour talking to me about Ecolab. I think that comes from his solid Midwestern upbringing.

Second was his passion for Ecolab and its commitment to sustainability as the core of its business model and strategy. Ecolab competed in an old-school industrial sector with a very new-school, cutting-edge approach.

Third, Emilio impressed me with his, and Ecolab's, vision for the future. Water is central to almost every industry, and industrial water use happens at a scale that's hard for most people to fathom. Water is scarce, and water fouled through industrial processing becomes water unavailable for drinking or other life-supporting uses. What Emilio, Nalco, and Ecolab saw clearly was that the stewardship of water would be *the* defining business, societal, and global issue within a decade or two. Emilio described the expansive Nalco/Ecolab mission to avert a water crisis by helping major industrial users reduce, reuse, and recycle immense volumes of water.

Emilio, who will offer his take on every topic I raise in the book, commented on our meeting:

When Professor Godfrey reached out to me back in 2017, it was a totally serendipitous encounter. He was looking for answers to some questions about Nalco and their products and someone put the call through to me. I picked up the phone and the rest, you could say – in keeping with the theme of this book – is history.

In that very first call, Paul and I connected about Ecolab's core purpose: sustainability, a topic that is both near and dear to me and the focus of my work for the past 11 years. At Ecolab, we're proud of our long and successful history, which is rooted in the principles of sustainability. We have always followed the belief that we must conduct business ethically and sustainably, being true to what we do best.

For us, that means delivering exceptional business and sustainability outcomes at the highest return for our customers. Our business model is even more relevant today than it was a century ago. Why? Because our greatest opportunity is to drive sustainable development through innovative solutions that help companies around the world achieve outstanding results while minimizing environmental and social impact. That has never been more important than it is today when we are faced with unprecedented global challenges.

That phone call in 2017 sparked a productive partnership. We've worked together to produce two cases for business school students, one about the Nalco acquisition – literally a textbook case of M&A done right – and the second about the development of Ecolab's 2030 sustainability goals. We worked well together and decided that the 100th anniversary of Ecolab's founding in 1923 (Nalco appeared five years later in 1928) provided a great platform to collaborate on a book about Ecolab and its commitment to sustainability.

This book aims much higher than being a mere recounting of Ecolab's first hundred years, an homage to a successful company and its leaders. The book builds from a simple premise: Companies, from the largest and oldest enterprises to the smallest and youngest startups, can learn valuable lessons from Ecolab to propel themselves on their journey toward sustainability. Ecolab's "secret sauce" isn't secret, it's based on time-honored and well-grounded leadership principles. Most of those principles are eminently transferrable. I hope that as you read, you'll say, "My company, or my team, can do that," and that you'll invest the energy, money, and time to become a more sustainable company in your own sphere. A century of experience is interesting, but if the lessons of that experience help you improve yourself and your organization, then that's a book worth reading.

For me, that hundred years of experience distills down to two key lessons: Being a good business is part and parcel of sustainability, and for sustainability to work over the long term, a company must "yarn-dye" a few important perspectives, principles, and priorities. Ecolab is a good business in the ethical sense of "good business" as praiseworthy. The company isn't perfect, and we'll point to more than one poor decision or outcome, but it's for good reason that Ecolab regularly appears on the "best company" lists of several organizations. Its management philosophies

and systems make it a great place to work and a valued business partner for customers, suppliers, and community stakeholders.

More importantly, Ecolab is a “good business” in a very traditional, economic sense of excellence along a number of key business metrics: market share, product and process innovation, and profitability. Nobel laureate Milton Friedman argued a half-century ago that executives had to choose between “social responsibility” and shareholder value. Ecolab reveals the error in Friedman’s either/or logic. Here’s a hint of what you’ll learn in Chapter 1: \$100 invested in Ecolab when it went public in January 1957 would have been worth \$249,770 in January 2020. That’s *5 times* the return on a similar \$100 invested in sector leader Procter & Gamble, and *34 times* the return on the S&P 500.

“Yarn-dyed” is a metaphor for deeply embedded. I’ll frame the metaphor with a question: Which shirt holds its color better and longer, one where the color was printed onto a previously white cloth or one whose cloth is made of dyed threads? You guessed it. Yarn-dyed fabrics hold their color better and longer than print-dyed ones. You’ll read in these pages how many of Ecolab’s best practices became “yarn-dyed.” In fact, Ecolab used sustainable business best practices *decades* before sustainability came in vogue. When these practices become “yarn-dyed” into your company’s actions, products, people, and culture, sustainability will flourish for you, just as it has for Ecolab. Yarn-dyed principles help leaders at any company identify the roots of sustainability and make lasting, long-term contributions to a better world.

Each chapter draws on the history of Ecolab or Nalco to illustrate how both good business and sustainability became yarn-dyed in the company, but the book is far more than a trip down corporate memory lane. We’ll rely on well-established theories and frameworks of leadership, organization, and strategy to tease out the why behind the what of Ecolab’s success. I’ve tried to make these ideas accessible because they are absolutely essential for you to realize that Ecolab’s success is not accidental. You can’t replicate Ecolab’s history, but you can install and instill the underlying principles in your own organization.

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The two of us, Emilio and I, share the byline for the book, but we've been supported along the way and we'd like to spend some ink formally recognizing and thanking those who've made this book possible. For Emilio, that list begins with his companion of 36 years, Dawn, and his three children who inspire him every day – Evan, Rachael, and Emilio Marco. Paul thanks his colleagues at Brigham Young University, especially Kim Clark, Lisa Jones Christensen, and Ben Lewis, for their long-term collegiality and their short-term feedback on chapters in the book.

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Finally, the Godfrey family, particularly Paul's wife, Robin, has endured another book project and given their full support, including edits and feedback that have made the book better.

FOREWORD

By Maelle Gavet, CEO Techstars and author *Trampled by Unicorns*

Beyond our flourishing program partnerships and co-investments in a number of successful startups in the future of food and agriculture space, Techstars and Ecolab have a great deal in common. Although we are markedly different businesses operating in different spheres, and Techstars has been in existence for a tiny fraction of Ecolab's now century-long history of pioneering innovation, we share two foundational principles.

First, we both believe that whether a company is at ideation stage or post-IPO, two hackers at a kitchen table, or a team dispersed around the world, the concepts of sustainability and profitability are not mutually exclusive. Rather, the first increasingly informs and underpins the second. Ecolab has been an outlier in this regard, successfully developing a business strategy where sustainability, and what it terms eROI, are core to the very purpose of the company – and long before corporate bosses were talking in such terms or there was a bandwagon in sight. Furthermore, we both believe that the application of this approach, at a time when the climate crisis affects all organizations, must be sector-agnostic for it to have global and generational impact. Techstars has invested in more than 700 sustainability/climate-tech companies, but the principle of embedding sustainability and long-term thinking in a team applies not just to them but to startups in every area from AgTech to Web3, and FinTech to fashion.

Second, we share a deep conviction that sustainability – and the business performance, productivity, and growth it unlocks – can only be achieved through technology and digital enablement. Not only does Ecolab invent and develop new technologies, but innovation itself has become an ever-bigger part of its overall strategy. Whether it's in manufacturing, automotive tech, the paper industry, or in 30,000 McDonald's restaurants around the world, Ecolab develops direct technology that marries up with its onsite expertise across 40 industries to improve water

quality, climate, health and food safety outcomes, and resilience at a time when all of these are under unprecedented duress.

One of the reasons I was so pleased to be asked to write the introduction to this book is that the ideas it contains are highly relatable and applicable to the hundreds, and soon to be thousands, of early-stage tech entrepreneurs Techstars invests in every year. Among the most important of these is how startups, from the get-go, should think about the holistic impact that their product or service can deliver for clients and communities. A robotics company, say, can not only offer its customers enhanced performance capabilities and productivity gains but also help drive down costs and reduce their carbon emissions and water footprint. A holistic approach for a transportation and logistics startup, meanwhile, would consider impacts on the environment and community stakeholders, as well as suppliers and employees, alongside successfully scaling its customer base.

Another defining area is leadership – and not just in the top-down sense. Standout leadership today is about staying true to your core values and empowering an entire organization – in Ecolab’s case, 48,000+ employees – so that every single team member understands that a company doesn’t exist in a vacuum but in a wider world in which all its impacts need to be taken into account.

Ecolab’s inspiring leadership teaches us to build sustainably from the start. Think holistically. Take the long view. Consider our place in the world. Sadly, we live in an era where greenwashing is more widespread than many of us would like to admit, and window dressing and slick PR all too often replace the hard yards required to reduce negative impacts and build resilience. Ecolab is the antithesis to this approach. And it isn’t “just” startups that can learn from them. So, whether you are formulating a strategy for a Fortune 500 company or are in your kitchen tweaking your first product, this book will help you connect your work with the most pressing issue of our time: creating a sustainable organization and society.

–ENDS–

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Chapter 1

THE CALL FOR A SUSTAINABLE WORLD

Amid the chaos, fear, and confusion of the early days of the COVID-19 pandemic lockdowns, something unforeseen appeared: clean air. People around the globe found themselves in various states of lockdown as offices, restaurants, schools, theaters, and almost everything else shut down. With nowhere for drivers to go, the number of cars on the road plummeted. The result? Global levels of PM 2.5, the particulate matter that generates haze in both skies and lungs, declined by 30–40% and concentrations of the nasty pollutant sulfur dioxide fell 25–60% worldwide.¹ In the crazy days of spring 2020, people from Tokyo to Tacoma, and from Boston to Buenos Aires breathed easier during the first months of a policy-induced global economic coma.

That global breath of fresh air reinforced two prevailing ideas about building a sustainable economy, in terms of both ecological renewal and human health. The first cemented the notion that dramatically reducing, if not eliminating, the fossil-fuel-powered internal combustion engine is an essential element. The second emerged from our collective consciousness as we experienced the outside world through Apple’s Facetime, Facebook, Skype, Teams, or Zoom: digital technology would pave a golden road to a more sustainable world.

The pandemic experience validated the first idea; the second, less so. Consumer-facing apps from Amazon through Zillow can reduce travel, fuel usage, and foul air, as well as accidents, breathing disorders, and the stress and general mayhem that all come with commuting. That pristine view of the digital-economy-as-sustainable-economy gets murkier the farther we go back in the internet value chain. Movement from software to hardware reveals an expensive and extensive web of “server farms” that enable us to seamlessly connect to and transact over the web. As of 2020, there were 3 million of these farms, known as data centers, around the world, but 600 or so constitute the largest type, hyperscale data centers. These behemoths occupy up to 400,000 square feet (about 10 acres) and house up to 5,000 servers. An average data center may use up to 50MW of electricity a year, enough to power 32,500 homes in a developed country. All that electricity generates heat, and if the temperature in a center gets too high, the problems begin. At best, a center goes offline – at a cost of \$8,000 per minute in lost revenue; at worst, 5,000 servers melt, at a cost of \$75,000 to \$100,000 each. Keeping those servers cool and functional

requires massive air conditioning capacity, and an average center will use 200 million gallons of very clean water every year to keep servers cool. That's a year's worth of drinking water for up to 667,000 people, or a city the size of Portland, Oregon.² With the amount of data being produced and stored expected to grow 50 times between 2019 and 2030, the expanding backbone of the internet presents its own sustainability challenge.

Where do the world's biggest server "farmers," from mega player Microsoft to specialist Digital Realty, turn to for help with managing their water needs? These "new economy" companies partner with a very "old economy" company for the most sophisticated and sustainable water management tools on the planet: Ecolab, founded in 1923, and its younger sister and subsidiary Nalco Water, founded in 1928. A sustainable digital economy depends very much on the deep knowledge, skills, and talents of companies with decades of experience in a sustainable industrial economy. The experience of Digital Realty, a San Francisco, California-based owner and operator of over 280 data centers in 50 metro areas around the globe, highlights the value of this knowledge and skill.

The core of the air conditioning system is a cooling tower, a very large unit that allows hot water – the heat generated by the servers – to cool by transferring that heat to the air. Digital Realty pays for the water it puts into that system and the water it discharges as sewage. The physics of a cooling tower, however, means that 80% of the input water evaporates during cooling, leaving Digital Realty to pay sewage charges for water it never returns to the system. Several US states, including California, offer an evaporation credit if a company can document its evaporation loss. Walter Leclerc, director of Environment Health and Safety for the company, brought in Nalco specialists to help document and claim those credits for one of its small centers in Los Angeles. The business result? Digital Realty now claims over \$150,000 in annual evaporation credits just for that site.

That work, begun in 2015, established what is now a long-term partnership. Leclerc and Ecolab team members used tools such as the Smart Water Navigator™ to create a global water use plan, and they deployed Nalco's 3D TRASAR™ technology to implement the program along with Ecolab3D™ technology to document results. The partners worked together to create and implement a global water strategy and solution for data center management. As of 2022, Digital Realty used 30 million fewer gallons of water each year, consumed 17MW less electricity, and emitted 12,000 metric tons fewer greenhouse gases. That's good for the