

## **PRAISE FOR *MASTERING THE CIRCULAR ECONOMY***

“The transition to a circular economy is a do-or-die choice facing business and society. More and more companies are willing to make the journey, but still lack the necessary insight, skills and tools to succeed. *Mastering the Circular Economy* is a must-have guidebook for transforming business into a proactive force for good. This vital book by Rozanne Henzen and Ed Weenk will broaden your perspective on the circular economy, deepen your knowledge and raise your aspirations to do more and better. The chapters weave together important concepts and best-practice examples, while offering helpful tools to turn ideas into reality. This book gives vital clues to how we can and must avoid overshoot and collapse in nature, society and the economy. I highly recommend it.”

**Wayne Visser, presenter of *Closing the Loop*, the world’s first feature-length documentary on the circular economy; holder of the Chair in Sustainable Transformation at Antwerp Management School; Fellow of the University of Cambridge Institute for Sustainability Leadership**

“Here are my two suggestions on how to enjoy this very practical and at the same time rigorous book: either as a perfect complement to the Blue Connection business simulation game (my favourite option!) to design a whole course around these two clear and powerful teaching tools and get the most out of them, or as a source of inspiration for a multitude of mini-cases and exercises to have a hands-on learning experience on the circular economy.”

**Valentina Carbone, Professor, Scientific Co-director of the Circular Economy Chair, ESCP - Paris Campus, France**

“Hands-on and engaging writing style with a brilliant structure where the reader is taken on the journey from idea to practice, and towards envisioning the future. Truly recommendable!”

**Desirée Knoppen, Head of Academic Department. Associate Professor of Circular Economy and Supply Chain Management, EADA Business School. Barcelona, Spain**

“At last: supply chain featured prominently in *Mastering the Circular Economy*! Operationalizing the circular economy poses a great challenge across our industry and profession: this book gives a solid foundation to grasping the importance of supply chain as we transition our operations, business models, and economies towards circularity.”

**Deborah Dull, Founder, Circular Supply Chain Network, USA**

*Mastering the Circular Economy* is a very timely and appealing book for multiple reasons. First and foremost the transition from traditional linear models to circular ones is of course a major societal and business challenge. Second, the book contains numerous relevant practical examples and exercises, with a prominent role for the Blue Connection simulation game. Third, the book provides a truly integrated learning approach, hence facilitating an experiential learning journey. And finally, this learning experience is supported by numerous inspiring illustrations. My favourite? It is difficult to make a choice, but I would opt for Figure 4.9, ‘The T-shaped supply chain manager’. This picture elegantly captures the complexity of the circular economy challenge, starting already in primary education. So, in the spirit of the Blue Connection simulation: Game on!”

**Bart Vos, Professor of Supply Chain Innovation and Scientific Director, Brightlands Institute for Supply Chain Innovation (BISCI), Maastricht University, Netherlands**

*Mastering the Circular Economy* is an engaging and hands-on approach to applying the concepts of circularity to business practices and developing the leadership competencies to drive organizational transformation. It gives clarity where we tend to see complexity and makes caring for our people, our organizations, and our environment accessible for managers worldwide. It is a must-read for purpose-driven people leading purposeful organizations.”

**David Dinwoodie, Centre for Creative Leadership, Spain, and co-author of *Becoming a Strategic Leader: Your role in your organization’s enduring success***

“Our current linear approach has got to change and adapt to a more mindful approach that recognises the impact our activities are having on the world. Adopting a circular approach that seeks to reduce our impacts that benefit all stakeholders is critical. One major challenge is – How to transition existing linear supply chains and business to a more circular approach? Managers both current and future will need to develop their understanding of the different strategies to achieving this. The Blue Connection is a simulation that allows us to manage this transition for an electric bicycle manufacturer. It surfaces many of the challenges we will face in reality and allows us to test different solutions and approaches to understand the interactions and inherent complexities. The book, *Mastering the Circular Economy*, which integrates the theory with the simulation will provide a unique opportunity for circular education and training and significantly enhance the experiential learning curve.”

**Denyse Julien, Associate Professor, Cranfield University School of Management, UK**

“Circular supply chains are getting momentum as a way to answer to the world’s limited resource availability and to the trend towards more responsible consumption. However, translating the idea into practical actions has proven to be challenging

and we need to educate and train the current and next generations of leaders. *Mastering the Circular Economy* is a very useful textbook to this purpose.”

**Yann Bouchery, Associate Professor in Operations Management & Logistics, Head of the Centre of Excellence in Supply Chains, KEDGE Business School, France**

“I have got to know Ed Weenk as an excellent scholar and outstanding executive educator. In the classroom, he leverages his academic background with his long-standing professional experience. For these qualities, he is truly appreciated by our students in the Executive and Professional MBA programmes. His substantial understanding for the field is not only demonstrated in the classroom setting, but clearly displayed in his books. Therefore, I am happy to see that in his latest publication, co-written with Rozanne Henzen, the focus is on a timely and crucial topic – circular economy. It needs experts like Ed and Rozanne to bring these pressing issues close to students at all levels and executives to make sure such that it also transcends fast and effectively into today’s business practice.”

**Barbara Stöttinger, Dean WU Wien Executive Academy, Associate Professor International Marketing Management, Austria**

“This timely book provides a thorough overview of the different aspects of the circular economy and concrete tools and exercises for implementing a circular strategy. The combination with the Blue Connection simulation game enables an experiential learning experience that will ensure that students master knowledge and skills needed in the circular economy. Both the didactical approach and the contents resonate very well with what TIAS stands for as School for Business and Society: transformative learning based on a combination of business modelling, sustainable innovation, collaboration and responsible leadership. The book covers these various challenges in an integrative manner.”

**Eric Dooms, Associate Professor of Strategy, and Mirjam Minderman, Policy Adviser & Lecturer Business and Society, TIAS School for Business and Society, Netherlands**

“I have used the Blue Connection simulation in my sustainable supply chain management course. I believe the textbook *Mastering the Circular Economy* will be an excellent resource to help integrate the simulation concepts with the course content of a sustainable supply chain management course, as well as provide guidance for the students in playing the Blue Connection simulation.”

**Evelyn Thomchick, Associate Professor of Supply Chain Management, Department of Supply Chain & Information Systems at The Pennsylvania State University, USA**

“This book offers an excellent contribution to the important topic of circular economy. It is practically relevant and academically rooted, it is well-balanced and interesting and in combination with the circular business game it serves as a fun and

inspiring teaching tool that deals with the realities of today and tomorrow. It is my sincere pleasure to recommend it!”

**Viktor Elliot, Senior Lecturer in Accounting and Finance at Gothenburg University and Director of Bitlab, Sweden**

“The book is an impressive combination of theoretical frameworks and practical tools on Circular Economy, supported by the online game on the virtual company ‘The Blue Connection’ of Inchainge. A must-have for lecturers in the field of circular economy and logistics!”

**Hedda van Raalte, Lecturer, Logistics Management/Supply Chain Management, thesis coordinator, Hogeschool Rotterdam, Netherlands**

“*Mastering the Circular Economy* provides comprehensive insights to our new reality post Covid-19. This book offers a theoretical and practical advice to rethink, reimagine, revalue and be resilient in a new business environment. The research by Henzen and Weenk reveals how the circular economy is the responsibility of every leader. This new approach is a major step toward the new humanity era.”

**Mario Chong, Professor, Universidad del Pacifico, Lima, Peru**

“Circular economy will most certainly be one of the top issues when companies develop strategies for the coming years. At the universities, the circular perspective will become a major topic when teaching students supply chain skills. This book, in combination with the game The Blue Connection, provides a practical and concrete tool for both top-level executives in companies and for professors at universities.”

**Søren Schulian, Associate Professor, cphbusiness Copenhagen, Denmark**

“Great timing! Now that the concept of circular economy is embraced more and more by governments and companies around the world, more practical questions in regards to implementation start to arise. This book helps fill the knowledge gap that exists between abstract circular economy policies and plans and the most practical level of implementation.”

**Bas Hillerström, Head of Operations, Circo NL, Netherlands**

“Henzen and Weenk have done an excellent job in *Mastering the Circular Economy*. With their book, they bridge the gap between the theoretical value chain concept and direct applications. They take the complex idea of circularity and clearly explain concepts and relationships using The Blue Connection to fully integrate different circular challenges. They also provide many examples and cases for the learner to think about how to apply data and overcome these challenges.”

**Wendy L Tate, William J Taylor Professor of Business, Cheryl Massengale Faculty Research Fellow at University of Tennessee, Knoxville, USA**

“Mastering the circular economy: from (easy to explain) theory to (difficult to obtain) supply chain circular efficiency. The book is a combination of an extensive description of theoretical concepts and an online supply chain serious game, allowing the reader/user to recognize that the devil is in the details in order to master the circular economy and to understand that a coordinated functional strategy for the different circularity factors impacting the supply chain is necessary to succeed.”

**Christian van Delft, Professeur Associé, HEC Paris, France**

“*Mastering the Circular Economy* is an honest and powerful resource to learn what the circular economy is and how people can master its application. The book will provide the reader with foundational knowledge, spark their curiosity, challenge their ideologies and fundamentally support the reader to take action. This is a book to not only sink your mind into but your whole being into. I am excited by what *Mastering the Circular Economy* will do for catalysing action. Our most critical need now is to move beyond theory to implementation and this book has the power to catalyse that.”

**Ashleigh Morris, CEO and Co-Founder of Coreo, Australia**

“A hands-on approach to learn all about how to transition to a circular economy! Especially the integration of a business simulation in a textbook is refreshing. I think it allows the learner to apply the theoretical circular concepts right away in a realistic and dynamic context, making it a powerful learning experience.”

**Maayke Damen, CEO of Excess Materials Exchange**

“For anyone keen to explore circular economy and even implementing it into practice, this is a great in-depth go-to guide. It takes you from a theoretical concept of CE through the practical challenges and considerations to an actual change in strategy and business models. All while providing insights on the market landscape, organisational lens, role of leadership, changing cashflows and value generation. This is done in an engaging way through exercises, examples and gamification. The Blue Connection game is simulating an actual business environment where you are developing circular products and services. Circular economy is crucial in the sustainability transition which is the only way to secure a liveable future for ourselves and the next generations. If you are keen to be a part of it, this book is a very good game plan to start with.”

**Andrea Orsag, Co-Founder of MissionC and circular economy evangelist**

“Our current transition from a linear to a circular economy is fraught with many obstacles, mostly of our own making. The methods and training exercises contained in *Mastering the Circular Economy* are aimed at allowing physical design choices regarding material use and re-use to be integrated with economic design choices.

They allow students to work with fundamental concepts in a highly practical matter. *Mastering the Circular Economy* will help you reassess the value proposition of products by taking (functional) residual value into account, alongside the lesser burden on operational expenses that a flexible, future ready product design allows for. This book will help you achieve this goal, better than most.”

**Olaf J Blaauw, Senior Consultant on Systems Thinking-based Transition and the Circular Economy**

“This comprehensive guide sets a new standard that is relevant for anyone wanting to learn how to increase the circularity of his value chain.”

**Julien Atgé, Head of Supply Chain Management, Weleda Switzerland**

“*Mastering the Circular Economy* presents an innovative multimedia format that turns the book from an inevitable alphabet soup of concepts into a gourmet delight with true business substance. As a reader, I found myself exploring the book’s concepts through various media and highlighted by a practical and robust computer simulation that gets you immersed and engaged. Don’t just read this book – experience it!”

**Lawrence Suda, CEO at Palatine Group/Management Worlds, Inc.**

“Very comprehensive reference book on the topic of circularity. You will find the entire journey from theory into execution. Really informative and useful for your circular transformation.”

**Wineke Haagsma, Director of Corporate Sustainability PwC, Netherlands & EMEA**

“At a time of rupture, as the Covid pandemic reveals our prevalent economic models as even less sustainable than we thought, systematizing circular economy models is seen as one of the solutions. So *Mastering the Circular Economy* is on cue, the kind of book many students, professionals and educators wanting to understand, implement and teach the subject will rejoice in: it’s accessible, clear, unpretentious and includes recent thinking on circular economy as well as a comprehensive overview of the topic looking back. It will please both the ‘hands-on’ and the more reflective reader, student or professional, with an array of exercises and tools and an extensive bibliography. A must-read for those engaging on the topic, and a complement to the Blue Connection circular economy business game, which is also an integral part of the book. Let’s build back circular!”

**Phoebe Blackburn, communications and circular economy consultant**

“A great book that gives the reader a tangible blue print and to start the transition toward circularity.”

**Ditte Lysgaard Vind, Managing Partner at Lendager, The Circular Way, and author of *A Changemaker’s Guide to the Future***

“Through a business lens, the circular economy is a strategy framework allowing a company to mitigate linear risk and capture circular opportunities more effectively than its competition. *Mastering the Circular Economy* uses this perspective in equipping its readers with practical tools and replicable examples that allow them to start their circular transitions immediately.”

**Brendan Edgerton, Director of Circular Economy, World Business Council for Sustainable Development**

“Great insights into the circular economy seen from a business perspective in this book. Taking part in the testing of the Blue Connection simulation game I found it a true eye opener into the circular decision making in companies and into the complexity of producing bicycles based on circular principles –and how great it felt, when we succeeded in making our successful change of your production to a more circular business model.”

**Markus Bjerre, Special Adviser at the Danish Business Authority**



# Mastering the Circular Economy

*A practical approach to the circular  
business model transformation*

Rozanne Henzen  
Ed Weenk



**Publisher's note**

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First published in Great Britain and the United States in 2021 by Kogan Page Limited

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2nd Floor, 45 Gee Street  
London  
EC1V 3RS  
United Kingdom  
www.koganpage.com

122 W 27th St, 10th Floor  
New York, NY 10001  
USA

4737/23 Ansari Road  
Daryaganj  
New Delhi 110002  
India

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**ISBNs**

Hardback 9781398602755  
Paperback 9781398602748  
Ebook 9781398602762

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**British Library Cataloguing-in-Publication Data**

A CIP record for this book is available from the British Library.

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**Library of Congress Control Number**

2021934580

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Typeset by Integra Software Services, Pondicherry  
Print production managed by Jellyfish  
Printed and bound by CPI Group (UK) Ltd, Croydon CR0 4YY

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## ABOUT THE AUTHORS

### Rozanne Henzen



Rozanne Henzen holds an MSc in Strategic Communication Sciences from the University of Antwerp, and received a Fellowship at the Stockholm School of Entrepreneurship during her studies, both focusing on consumer behaviour and circularity for the textile industry. Currently, Rozanne is researcher and circular economy expert within the Expertise Centre for Sustainable Transformation at Antwerp Management School (AMS).

Her research and consultancy services involve research for several national and international research projects within the field of sustainable transformation. She manages the AMS Corporate Leadership Groups, whereby companies jointly commit to public annual actions to promote the circular or well-being economy. As part of her work for AMS she gives Circular Economy 101 lectures and is part of the Global Leadership Skills faculty team.

Rozanne was previously a member of the Dutch National Think Tank focusing on Accelerating the Transition to a Circular Economy and conducted research on individual sustainability leadership. In 2020 her first book was published for the Dutch market, titled *De kleine Circulaire economie for Dummies*, being the first official *For Dummies* book on a circular economy with a clear and thorough explanation, and tips to contribute to a fully circular Netherlands. She is currently being recognized for her sustainability efforts as one of the Sustainable Young 100 of 2020 in the Netherlands.

In her spare time, she tries to make the complexity of a circular economy and other sustainability related topics accessible for everyone through her Instagram (@reduce.reuse.rznn). In doing so, she hopes that people will see the transition to a circular economy as an adventure, instead of a restriction.

### Ed Weenk



Ed Weenk MSc PDEng is an experienced lecturer, corporate advisor and workshop and training facilitator. His professional passions are sustainable operations and supply chain, managers and management, projects and project management, training and teaching, and business simulations and experiential learning.

He has extensive practical experience since the mid-1990s in managing international logistics and distribution projects at strategic and operational level and is a strong believer in the principles of experiential learning. Alongside his practice as an independent professional, he is delivery partner and authorized trainer in the Inchainge business simulations in the Netherlands and the Palatine Group in New York.

Ed collaborates as a Senior Associate Professor at business schools such as EADA Barcelona (Spain), Maastricht School of Management (the Netherlands), TIAS School for Business and Society (the Netherlands), Antwerp Management School (Belgium), WUWien Executive Academy (Austria), Rotterdam School of Management (the Netherlands) and Centrum Graduate School of Business (Lima, Peru). His specialization is on the topics of operations and supply chain management, circular economy, project management, and intra- and entrepreneurship.

Ed has previously written a management book, *The Perfect Pass: What the manager can learn from the football trainer*, published in English, Spanish and Dutch, about the importance of seeing the *big picture*, having good internal and external *alignment* and achieving *coherence* at all levels. In 2019 his second book was published, titled *Mastering the Supply Chain: Principles, practice and real-life applications*, now available in English and Dutch. Similar to *Mastering the Circular Economy*, this book combines relevant theory and frameworks with practical application through a business simulation.

### Noah Schaul (contributor)



Noah, originally from Luxembourg, speaks five languages fluently (Luxembourgish, English, German, French and Dutch) and currently lives in Utrecht, the Netherlands.

From a young age, sustainability was a key interest, later on developing into his passion for sustainable business. Noah graduated *cum laude* from Utrecht University's honours programme, studying a BSc in Economics and Business Economics, with a minor in Economic Geography.

His thesis about revisiting the impossibility of universal basic income was published on the Citizen's Basic Income Trust website.

After projects in sustainable food, the sharing economy and art business, Noah joined Inchainge in 2019. There, he had the opportunity to dive deep into the circular economy.

Among his first projects was the launch of the newly developed circular business simulation The Blue Connection. During the 'City Tour', key stakeholders were invited to showcase events across Europe to experience the brand-new circular strategy business simulation. This project allowed Noah to meet professionals, academics, NGOs, consultants and politicians to discuss optimal ways to transition to circularity.

Over the course of 2020, Noah has developed into a thought leader on circularity within Inchange, establishing a reputation as ‘Mr Circular’ within his team. Noah is now one of the master trainers in The Blue Connection, facilitating Train the Trainer events, professional programmes, university courses and MBAs.

As a strong believer in cooperation, Noah has started to build a circular economy community for the Netherlands on LinkedIn and is growing the network of delivery partners for Inchange.

## BACKGROUND

EGGE HAAK – PARTNER AT INCHAINGE

Inchainge is a Dutch company fully dedicated to experiential learning in Value Chain Management based on business simulations. We constantly create new simulations and training programmes as well as enhancing our existing ones, so that learners around the industry and around the world can be supported in their learning journeys. Being a small and compact organization we take great care in developing and maintaining a large network of both professional trainers and educational teachers and professors around the globe.

We see around us that the volatile and uncertain world we currently live in creates enormous challenges for companies and their value chains. Change is the only certainty in everyday business and in order to adapt supply chains successfully, a thorough understanding of their dynamics and interdependencies is absolutely necessary. But just understanding the system as a whole will not be enough – constant adaptation also calls for leadership skills in collaboration and teamwork.

At Inchainge, we believe that such understanding and the corresponding skills can only be acquired through active experience. I'm referring to the full experience of managing a value chain with a team, of handling all dimensions in an integral way, of exploring how everything is connected, of working effectively together as a team. On top of this our mission is to help students and companies create alignment between strategy and execution, between departments in a company, and between business partners in the value chain.

We have designed and built all of our business simulations with these objectives in mind, starting with *The Fresh Connection* in 2008: to help learners understand relevant concepts, to provide them with a platform to experience these in a virtual company setting and thus acquire the necessary skills in order to better deal with the complexities of alignment in the competitive and fun setting of a game. But we don't stop there – we also have a wide diversity of materials to support teachers, trainers and learners in their usage of our simulations and to enrich their experience with meaningful content.

That is also where this book fits in, like its predecessor *Mastering the Supply Chain*. Apart from our existing simulations and supporting materials, we were looking for a way to further bridge the gap between theoretical value chain concepts and their direct application and that is precisely what you will find here. The book starts with an overview of many critical concepts around the topic of circularity, then

invites you to discover their practical application using The Blue Connection as an interactive case. The third part of the book goes beyond the pure context of the simulation, providing learners with a wealth of additional circular challenges to think about. With this, I believe the book will be extremely useful to both learners and their instructors, be it in business or in the educational world.

At Inchange, we trust that *Mastering the Circular Economy* will set a new standard and bring the integral experience of The Blue Connection to a higher level.

## FOREWORD: GAME ON!

PROF DR MICHIEL STEEMAN, WINDESHEIM UNIVERSITY  
OF APPLIED SCIENCES

We are fortunate that, for the good of the planet, consumers and regulators have environmental concerns much more front of mind than ever before. From carbon emissions to resource depletion to the junk that floats in our seas, we all have a far greater awareness of the need to be much more careful about how we use and dispose of all the things we buy. Manufacturers and other players in the distribution chain have, for the most part, not been slow to recognize that they have legal and moral responsibilities to society. The smarter ones have seen a business opportunity as well.

But the circular economy concept is developing further, becoming more structured and sophisticated in its approach. In its wake are coming new ideas about product ownership and use, new business models – and new financial models to support circular supply chains. From an academic research perspective there are still a lot of questions to be answered. In my own field of research, for example, we look into changing ownership models, the importance of residual value, the effects on cash flow and the need for trusted data. However, it can be said that collaboration and alignment are the keystones in these emerging paradigms. We are going to see new forms of collaboration between partners up and down the physical, financial and information supply chains, upstream and down.

Such a collaborative transition to a circular economy – for all its obvious advantages in terms of natural resources, climate change and pollution of all kinds – is not easy. Windesheim partnered with Inchainge and ING over the past several years to develop The Blue Connection, a circular business game that will entice company employees and university students to understand how to get a grip on all the conflicting challenges that a transition to a circular economy entails.

And now, with this book on *Mastering the Circular Economy*, Rozanne Henzen and Ed Weenk have achieved an integration of all the elements that professors, teachers, educators and trainers need to teach about the circular economy. A truly integrated learning approach as the authors would call it. It will take students on a journey, which starts with exploring the current theory and historical background of circular economy. Students can then apply these concepts in a realistic context using The Blue Connection and eventually imagine how the transition will unfold in the future.

The combination of the book and the circular game supports a truly blended approach to teaching: offline and online, individual and team learning, soft skills and

hard skills, serious and fun. It will allow educators to really engage students with different learning styles or cultural backgrounds. I go so far as to say that this topic is actually binding this generation of students and young professionals.

What a privilege it has been to work together with these authors, game developers, professionals, researchers and teachers to develop these learning tools that can harness the intrinsic motivation of this generation. Let us now try to reach as many people as possible and engage them to support the movement to a circular economy. Game on!

# **FOREWORD: HANDS-ON GUIDANCE FOR FUTURE- PROOFING YOUR BUSINESS THROUGH CIRCULARITY**

ALICE SCHMIDT MSC, AS CONSULTING, VIENNA UNIVERSITY OF ECONOMICS  
AND BUSINESS

Companies around the world are beginning to realize that future-proofing their businesses and brands will require shifting from linear approaches to circular ways of doing business. Whether large or small, the companies that come to us for advice have in common that they want to know how to do this in a way that makes business sense. To these enlightened companies, the ‘why’ no longer needs to be explained.

The case is clear: virgin resources are finite and hence getting harder and more costly to obtain. Regulators are waking up to the social and economic costs of pollution, requiring companies to take responsibility for their impact along the entire value chain. At the same time, tools, technologies and business models exist that help companies reduce, reuse and design their products in ways that minimize virgin resource input while allowing for repair and refurbishment, thus leaving recycling as a last resort rather than as a centrepiece of sustainability. And by the way, circularity is a key tool to address climate change as well: products are responsible for almost half of all greenhouse gas emissions!

Business models that ignore these factors or, worse, are built on planned obsolescence are not fit for the future. While we must drastically rethink the way in which we do business, it’s not like we need to reinvent the wheel. Only a couple of generations ago we found it natural to treat ‘waste’ as a resource and have things fixed when they were broken as this simply made economic sense. Some companies and many people, particularly in developing countries, have retained this wisdom.

When teaching BA and MBA students from around the globe about Sustainable Business and Managing for Tomorrow, I am always inspired by their intense interest in sustainability, circularity and in harnessing the immense power of business to create a better world. They realize that destroying the natural environment which we all depend on for a healthy and happy life does not make economic sense.

Despite these students’ interest and passion – and the fact that business demand for employees who understand sustainability and circularity is significant and growing – the offer of concrete guidance, such as practical textbooks on circularity and sustainability, has been very limited. Generations of students and hence businesses may have missed out on essential practical tools and insights to translate academic insight into concrete, circular action.

This is why *Mastering the Circular Economy: A practical approach to the circular business model transformation* is so welcome and essential. It offers comprehensive insights into anything you ever wanted to know about the circular economy and, importantly, provides a wealth of tools that help you master sustainable business model transformation in a hands-on manner.

## **FOREWORD: THE CORPORATE CIRCULAR IMPERATIVE, THROUGH THE LENSES OF PHILIPS AND ING**

The circular economy is not only taking a new perspective in terms of how things are being set up and done, but also in terms of mindset. A key element of this mindset is collaboration, so here we have a joint view on the corporate perspective by ING and Philips.

HARALD TEPPER, SR DIRECTOR SUSTAINABILITY AND CIRCULAR ECONOMY  
PROGRAMME LEAD, ROYAL PHILIPS

At Philips, a leading health technology company, our purpose is to improve people's health and well-being through meaningful innovation. We aim to grow Philips responsibly and sustainably and have set ourselves ambitious environmental and social targets. For a sustainable world, we see the transition from a linear to a circular economy as a necessary boundary condition. We are fundamentally rethinking our economic model and the role of business in society.

The heart of the circular economy lies in decoupling value creation from the use of natural resources. Everyone in business should always ask: 'How can I offer value – to customers, end users, and society at large – with minimal use of materials?' You can offer products 'as a service', and reuse, repair, or refurbish them. You can extend their value by predictive maintenance, and (remote) upgrades. And, in this age of digitization, you can often design software solutions that offer greater benefits while needing less hardware.

At Philips, we find that the business benefits extend far beyond growing revenue and reducing cost: circular economy drives innovation, allows employees to live their purpose, and changes relationships with customers and suppliers into true partnerships.

To succeed on this journey, you need courageous targets, personal leadership and commitment, as well as radical collaboration – across businesses, governments, and knowledge institutions. I hope this book will help readers to better understand the topic and to gain the necessary skills to put theory into practice.

MARLOES BERGEVOET, SR MARKETEEER AT ING WHOLESALE BANKING

The pathway to circularity is a road that has already existed for a long time, although we did not give it this name in the early days. When I first set foot on it, about five years ago, I realized that it is an evident route if we want to tackle the environmental challenges we face today. Luckily, more and more travelling companions are joining,

which is necessary because making circular concepts successful requires collaboration across companies, industries, countries, government bodies and beyond.

This collaborative approach is something that appeals to me, as well as the obvious links the circular economy has to sustainability, innovation, economics, and customer intimacy. In my function as a marketer at ING, I have been able to explore and connect the dots between all these pillars. The possibilities are endless, and I find it fascinating to explore how companies rethink the way they design, produce, and sell their products (as a service).

From an economic perspective it is key to understand that in the circular economy, economic growth is decoupled from resource consumption. Different ownership structures arise, the lifetime of products and materials is extended, revenue models change and as a result we as a bank have to value differently, treat risk differently and finance differently. It truly requires a shift in mindset, and ING is investing heavily in financial solutions to support the circular economy as well as the circular mindset.

At ING, I've seen the beauty of applying supply chain simulation games to boost knowledge, build relationships and spark commercial discussions. That's why ING, and I personally, have been involved from day one in the development of The Blue Connection. I've seen in practice the power of the simulation throughout the numerous sessions I've hosted with clients and colleagues around the globe. It makes complex concepts, such as the circular economy, tangible and allows people to play and experiment with it in a scenario where they need to build their own circular company. And after every session I facilitate, I hear back from the audience the need to collaborate and look beyond your own area of expertise; not only within your own company but even within your own value chain.

I'm a strong believer in experiential learning and really happy to see how this book helps to build the theoretical backbone to support the action learning in The Blue Connection. I hope that with these tools you'll pick up the energy to make change happen and look forward to connecting with you on the road to circularity.

## PREFACE: THE CORPORATE CIRCULAR IMPERATIVE: NARRATIVE AND NUMBERS (1)

Many students learn best when they are actively doing things and not only studying ideas in the abstract: when their curiosity is aroused, when they are asking questions, discovering new ideas, and feeling for themselves the excitement of these disciplines.

KEN ROBINSON AND LOU ARONICA

Circularity is not just about recycling. Circularity is not just about fighting climate change. Circularity is also not just the latest hype in sustainable business. In fact, circularity isn't even new.

Check out any major city in Africa, India or South America to find large clusters of car repair shops, household appliance repair shops, clothing repair shops and so on. In Europe or the United States, for most people circularity arguably was quite a normal element of daily life until at least the 1950s. A world in which things which were broken, from household appliances to tools to clothing, would be repaired, mainly out of *economic necessity* – there simply was no money to buy something new.

In Europe and the United States, with the economies booming from the 1960s onwards, consumerism has entered over time as the *modus vivendi* and people have gotten used to throwing things away to be replaced by newer or more fashionable things. At best these items are replaced at the end of their physical lifecycle, but in many cases it is long before, and all too often even before using them at all. If other countries that are trailing in the development curve follow similar development patterns, possibly similar behaviour will be observed there in the future.<sup>1</sup> As much research demonstrates, we are already moving fast towards hitting resource boundaries on the planet. Thus, the economic necessity is maybe no longer the main issue; rather, *resource necessity* (read: scarcity) may become the issue.

As the saying goes, *necessity is the mother of invention* and it can be observed that more and more people, governmental institutions and companies are beginning to see that action is required and that new ways of looking and acting are needed. In short, circularity is gaining relevance, and fast.

Circularity is a highly complex, multi-faceted subject, ranging from product design to reverse logistics to fiscal regulations to international governmental policies to company ecosystems, and more. In addition, the field of circularity is developing rapidly, in terms of academic research as well as new legislation and the proliferation of circular startups.

At the same time, the topic is approached from very different angles. Many people involved in circularity have a strong ecological or even ideological drive, emphasizing that action is needed in order to save the planet from disaster and even our species from extinction. Others approach circularity from a much more technical point of view, not necessarily driven by sustainability motives at all, looking for example at how new materials or new technologies can be used. We believe that somehow, when speaking about circularity, all of these dimensions, angles and voices need to be heard in order to get a complete picture.

Having said that, however, what does this mean for individual companies? Why should a company at their micro level be involved in helping to solve macro issues like climate change? Or invest heavily in more durable product designs and/or materials, at the risk of becoming more expensive than their competitors? In other words, what's the *Corporate Circular Imperative*? Why should a company care? That's one of the central questions we raise in this book, with *narrative and numbers* as recurring key themes.<sup>2</sup>

And we want to do that in the spirit of the quote at the beginning of this Preface: to create a textbook with a clear and strong focus on practical application by learners. Albert Einstein allegedly used to say that instead of focusing on teaching and explaining theories and concepts, he preferred to put emphasis on providing the conditions in which students could practise and learn. In allusion to Einstein, this book wants to provide a solid basis for learners to practise and learn how to master circularity from a company perspective.

*Mastering the Circular Economy* is written for people studying such diverse topics as Business, Sustainability, Supply Chain Management and so on. It can be used as part of courses in schools and universities within specialized circularity or sustainability programmes, but also links well to courses within programmes of a more generalist nature, from Bachelor level up to (Executive) MBA. In addition, the book is written in such a way that it is also suitable for use by professionals, either for individual self-study or for in-company trainings.

## Integrated learning approach

In the same spirit as the previous textbook, *Mastering the Supply Chain*, from the same series, this book is proposing an integrated learning approach.

Specifically, there are three main desires behind the topics chosen for the book and the strong emphasis on practical application:

- 1 The desire to put the increasing need for developing *21st-century skills* such as critical thinking, complex problem solving and coordinating with others into the practical context of circularity.

- 2 The desire to actively address the recurring theme of *simple but not easy*, i.e. to provide a way to make learners feel first-hand the many complexities of actually applying the often relatively straightforward concepts and frameworks at play in circularity.
- 3 The desire to combine the *multiple perspectives on circularity* into one coherent and holistic view on the topic, focusing in particular on the company perspective, the leadership perspective and perspective beyond the company frontiers.

One element related to those, however, deserves specific attention here. Since we're dealing with practical skills, experiential learning seems to be a very appropriate way of developing and training such skills. We'd like to particularly reference the work of David Kolb, whose book *Experiential Learning* is a classic on the topic. Among other important contributions, such as for example the concept of individual learning styles, Kolb is well known for what is called the learning cycle.

The main idea behind the learning cycle is that 'knowledge results from the combination of grasping and transforming experience. Grasping experience refers to the process of taking in information, and transforming experience is how individuals interpret and act on that information. [...] This process is portrayed as an idealized learning cycle or spiral where the learner "touches all the bases".'<sup>3</sup>

In experiential learning, the focus is on going through a first-hand experience, which allows for reflection on what happened and why, leading to forming a conceptual view on the situation, potentially reinforced by existing theories and/or frameworks. This combination will then be the basis for an improved view on the situation, which can then be applied in the next experience, either in class or other study environment, or directly in a real-world situation. In the book we will use a business

FIGURE 0.1 Integrated learning approach

<b>Integrated learning approach</b>	
<b>Meaningful &amp; relevant</b>	Needs to appeal to learner's perspective: business, society, citizenship
<b>For now &amp; the future</b>	Not only the basics, but link to future changes & challenges
<b>'Feel' the complexity!</b>	Everything looks simple, until you're in the driving seat
<b>Knowledge &amp; skills</b>	Not only ' <i>know the concepts</i> ', but also ' <i>able to decide</i> ' (trade-offs)
<b>Individual &amp; team activities</b>	Individual view versus team & cross-functional alignment
<b>Engaging &amp; fun</b>	Motivate: through the <i>content</i> , but also through the <i>methodology</i> ('gamification')

FIGURE 0.2 The learning cycle



SOURCE after McLeod (2017), based on Kolb (2015)

simulation game called The Blue Connection as an important tool for facilitating this experiential learning.

### The multiple perspectives on circularity

Circularity has many faces and covers a wide array of activities as far as scope is concerned. But it also has very distinct dimensions, which are very different in nature. Even if we want to focus on what circularity can mean at the (micro) company level, there are still many aspects to be addressed.

First, we need to define what circularity means from the ‘**company perspective**’. Why would a company engage in becoming more circular, i.e. how does it match with concepts like strategy and purpose? And what does becoming circular mean at the company level? What are the alternatives and what are their implications for the goods flows that need to be managed? And what are feasible and viable business models that go together with circular strategies? And what does that mean for the company’s financials?

Second, circularity also has a clear ‘**perspective beyond the company boundary**’. Even more than in regular business, the dependency on what governments do or do not do, which new circular ecosystems emerge, or which new educational requirements become visible, mean that companies are forced to have a clear view on what happens outside.

And third, becoming and being circular calls for a high degree of coordination and collaboration, but also of innovation and change. Therefore, circularity at the company level also has a clear ‘**leadership perspective**’. How can circularity be measured? How do the different departments involved need to align? What does the path from linear to circular look like and how can the transformation best be managed?

Because of their importance and because of their differences as well as interdependencies, these three distinct perspectives (company, beyond the company boundary and leadership) will be dealt with explicitly and separately. In fact, together they form the backbone of the structure of the book.

As a last comment in this Preface, we want to go back to the *Corporate Circular Imperative*, mentioned earlier on. There are many opinions about why companies should or should not engage in becoming circular. And practice unfortunately shows examples of companies claiming to be very sustainable or circular when reality turns out to be much less positive about what they really do. John Elkington, a long-time advocate of sustainability and the person who coined the concept *Triple Bottom Line* of people, planet and profit, in fact did a ‘concept recall’ recently, because he found that too many companies were merely using the concept in order to look good, rather than do good (Elkington, 2018).

In the book, we want to stay away from imposing opinions, but we do address the many viewpoints that can be found in practice. We introduce a few (fictitious)

FIGURE 0.3 The three perspectives on circularity at the core of the book

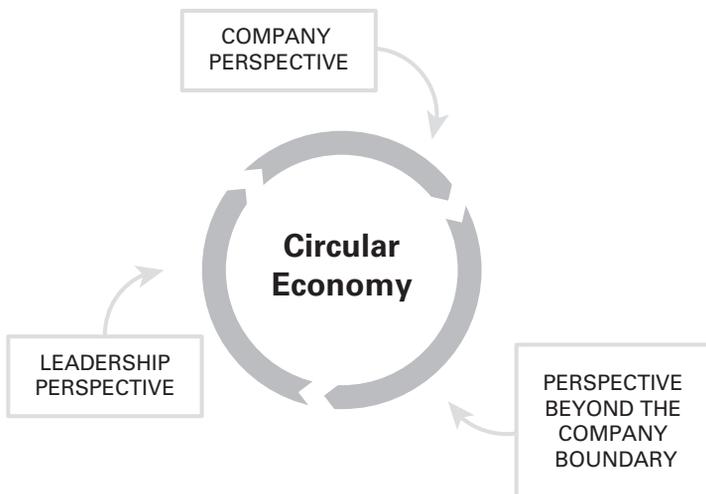
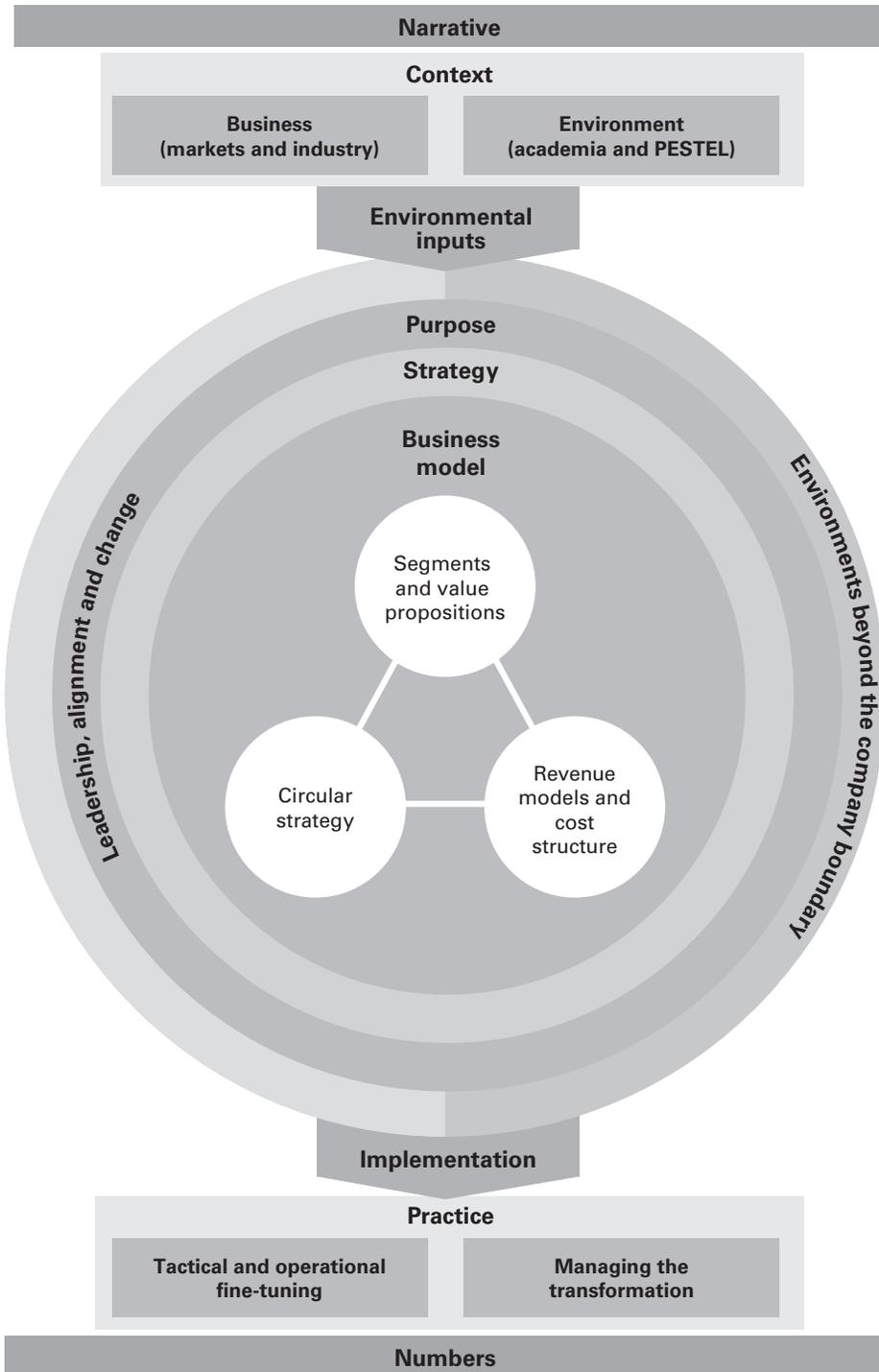


FIGURE 0.4 The journey of narrative and numbers (the Corporate Circular Imperative)



characters to accompany the learner on their circular journey, via dialogues that appear throughout the book. These characters express opinions that can be found around us, sometimes agreeing, sometimes disagreeing. Step by step, they go from context to company purpose, strategy and business models to practice, thus discovering the multitude of aspects involved in the narrative and numbers of the Corporate Circular Imperative.

We hope that this book will help the learner to better understand the topic of circularity and that these dialogues will allow the learner to make up their own mind and define what they see as the Corporate Circular Imperative and the narrative and numbers that could go with it.

## Notes

- 1 Please do note that the simplistic distinction between ‘developed nations’ and ‘developing nations’ in practice requires a much more differentiated view, even within countries, as has been shown beautifully in Hans Rosling’s work (e.g. Rosling et al, 2018).
- 2 The notion of ‘narrative and numbers’ was introduced in an article on business models by Magretta (2002).
- 3 McLeod, S (2017) Kolb’s learning styles and experiential learning cycle, SimplyPsychology, available from: <https://www.simplypsychology.org/learning-kolb.html> (archived at <https://perma.cc/74X7-QD8F>)