

# Circular Route

A roadmap for a circular business model

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# Foreword

Our present-day economy is mostly linear. We search for and extract raw materials, including agricultural products; we process them, then consume the resulting products and throw away what we call 'waste'. This model is not sustainable in the long term and will lead to unnecessary resource scarcity and wasted value.

Growing numbers of organizations (including NGOs) and companies are working, partly in cooperation with government, on transitioning to a circular economic system in which various final or intermediate forms of 'waste' provide the raw material for new products or product cycles.

The development of the circular economy can offer solutions to the major challenges posed by the global food problem, enormous inequalities in distribution and consumption of raw materials between rich and poor, production of waste, climate change and the development of (bio)renewable alternative energy sources. It also provides a framework for a wide range of innovative opportunities and new revenue models.

The fact that we often talk about scarcity of raw materials is strange. Because we are the ones making them scarce. Raw materials are often mixed with other products and materials before becoming waste, making them hard to reuse. But they are still here on the planet. By developing new, smarter supply and value chains, new technologies and new policies, we can safeguard the future for coming generations. The business community has a key role to play in solving the problem and offering prospects to companies. Close cooperation with government, researchers and NGOs will be required.

If we want to continue to use our raw materials and secure food, energy and prosperity for the entire global population, we need to change our approach to the use of raw materials and transition from a linear to a circular economy. This links sustainability to new revenue and business models.

This means making adjustments in four main respects: a more circular structure for business chains; innovation and technological development to facilitate this; more responsible consumer behavior; and policies and regulations to make these changes possible.

*Circular Route* is an important book which describes these circular revenue models. And because we are still at the beginning of this transition, it is valuable to discover what went well for the thirty-one companies studied, and where lessons have been learned. All of this has been converted into a clear approach to interest others in the logic of the circular economy.

Feike Sijbesma  
CEO, Koninklijke DSM N.V.



# Preface

The idea of the circular economy has been circulating in society for some time now. The circular economy is a hot topic for government and the business community. It is about radically reducing the waste associated with products and services after their period of use. Waste is processed into degradable quantities or disassembled and partially reused. Partly due to increasing scarcity of raw materials, pressure is also growing for drastic reductions in – at the very least – the volume of waste we produce.

The transition from ‘possession’ to ‘use’ and ‘reuse’ is intended to curb the increasing scarcity of resources. This task challenges companies to seek innovative ways to update their revenue models in forms that combine products and services. By further integrating products with services, they create new markets and also the ability to take responsibility for the origin and entire lifecycle of their products: ‘cradle-to-cradle’. This responsibility leads to the redesign of products and processes, which requires substantial investment. Moreover, the reuse of scarce raw materials also creates a potential for revenues.

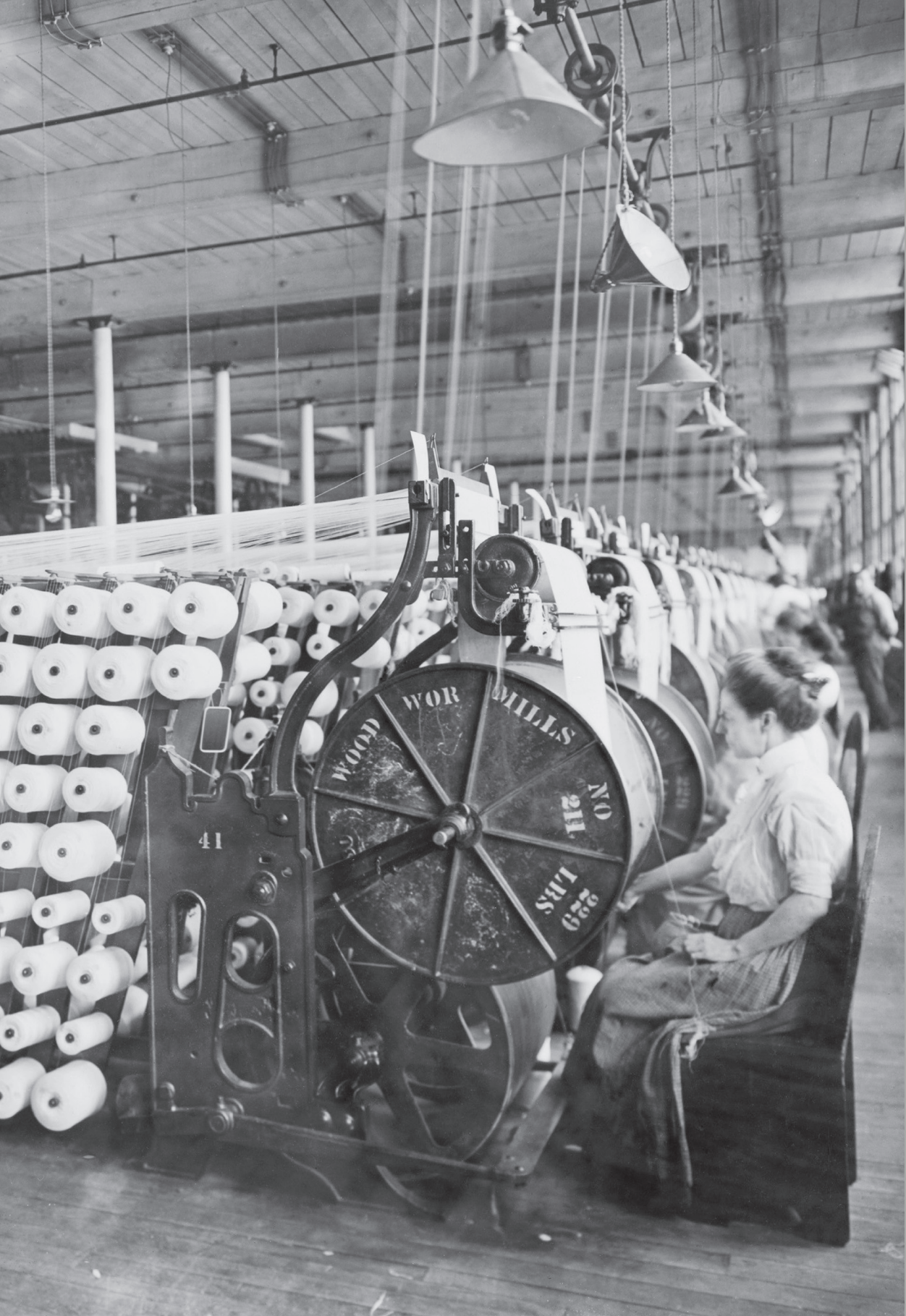
However, evolving toward new business models is a challenge for many companies. Products and organizations often need to be drastically adapted and barriers removed in order to exploit opportunities. The design and implementation of circular business models leads to major adjustments for companies because the entire chain also needs to be (re) designed. Producers can make extensive use of electronic communication and platforms in order to manage these chains. However, recovering and processing used products inevitably raises some complex distribution issues.

It is fascinating to gain an insight into how new and existing companies are able to develop and implement circular business models in ways that reveal opportunities and threats for existing companies.

Thanks to the researchers, Stichting Management Studies has succeeded in achieving the goal it set itself with the ‘*Circular Route*’ study, namely investigating relevant management topics for the administrative practice of existing companies. The board is very grateful to researchers Guido Braam, Dionne Ewen, Lieke Ossenblok, Helen Toxopeus and Karen Maas for the performance they have delivered. The supervisory committee, chaired by Dick Okhuijsen, CEO of Transparent, has also contributed very actively to the completion of this study.

I wish you every success on your circular journey.

Harry van de Kraats  
Chair, Stichting Management Studies  
June 2018



# Introduction

'The Cabinet's ambition is to work with the business community, knowledge institutions and government to utilise scarce raw materials and waste flows more effectively, smarter and more profitably. In this way we will build a circular economy that is not only good for the climate, but also generates income and jobs.'

*Henk Kamp, Dutch Minister of Economic Affairs, referring to A Circular Economy in the Netherlands by 2050*

We are facing a major challenge. And not for the first time in human history.

Take yourself back to a different era...

The year is 1765. You are a respected textile entrepreneur producing handwoven fabrics for wealthy citizens. The 'Spinning Jenny' has just been invented: a huge step forward. You are of course aware of the possibilities of the steam engine, invented sixty years earlier, but it will be many years before James Watt's invention becomes applicable on a broad scale. So you keep doing what you've always done: weaving and spinning in the same way as the Ancient Egyptians were doing as long ago as 3400 BC. After all, you 'don't have a crystal ball' and you 'won't be around to see it'.

The fact that you are operating in the middle of the first industrial revolution won't become clear until a hundred years later. The fact that it would turn out to be a Copernican Revolution – a paradigm shift with major repercussions in the social, spatial, philosophical and cultural domains – no-one could have predicted. Or could they?

## THE ERA OF THE CIRCULAR ECONOMY HAS ARRIVED

The era of our linear system – where materials and products have a short, finite life and are then destroyed – is not yet over. But we already know that this system is finite: raw materials cannot continue to be depleted indefinitely and the climate is changing dramatically due to our current system of industrial production.

A transition to a circular economy offers not only solutions but also countless opportunities, as we in the Netherlands well know. The National Agreement on the Circular Economy has been signed by more than 200 parties, and the government has set itself the ambition of a 'Circular Economy for the Netherlands'. Smart economic solutions such as waste reduction and innovation in terms of products or materials can help to counteract the depletion of natural resources. At international level too, there is a mandate for sustainable use of natural resources in the shape of the Sustainable Development Goals<sup>1</sup> (SDGs). Combating climate change, clean energy, sustainable cities, and responsible consumption and production are key priorities of the SDGs.

### Our definition of the circular economy

A circular economy is a resilient economic system that creates value now and is sustainable in the future. In a perfect circular economy, all materials are constantly recirculated without wastage and without waste. The economic system can create value by maintaining and improving social aspects, economic aspects and health.

<sup>1</sup> [www.un.org/sustainabledevelopment/sustainable-development-goals/](http://www.un.org/sustainabledevelopment/sustainable-development-goals/), retrieved on 20 July 2017

The circular economy is founded on six principles that need to be balanced within the system: materials, energy, water, society, health and prosperity. This means that recycled materials must not be harmful to people or the environment and that economic prosperity is part of a circular economy as well. Organizations can capitalize within a circular economy by means of cost reduction and/or a profitable revenue model.

The transition to a circular economy calls for a broad approach incorporating technical, social and system innovations. If we succeed in this, the era of the circular economy could well herald the next industrial revolution.

## FROM TALKING TO DOING

Numerous reports and studies have been published on the opportunities offered by the circular economy.<sup>2</sup> In practice, things are less manageable. Organizations face a concrete challenge: how to translate these lofty circular ambitions into practice? For a successful transition, organizations need to look for innovation in their business models that will help to preserve the value of materials. Ways to do this include reusing products, parts and materials and/or extending use by using materials in *smarter* ways or by switching to a service model. The circular economy offers opportunities for innovation through smarter use of raw materials, reduction of waste streams and cooperation in the supply chain.

At the same time, organizations face other challenges: adapting product designs, restructuring the internal organization and setting up new agreements or partnerships with suppliers and investors are not things you can just do ‘on the side’. This also entails investment, accompanied by uncertainty as to whether these costs of change will generate the expected savings or returns at the end of the journey. Circular economy is an opportunity that raises many questions in practice, without much clarity as to where an organization can start tomorrow to organise itself accordingly step by step.

This book has been written to help organizations get started with a circular business model. Besides sharing our own experiences and vision of the circular economy from a business and/or academic perspective, this book includes contributions from many companies and organizations that have already started working on the circular economy. To this end, we have developed a ‘circular innovation model’, supported by practical examples. This book serves as an inspiration to integrate circular economy into new and existing organizations, despite the limitations that undoubtedly exist. We want to move from ‘talking about the circular economy’ to ‘doing the circular economy’: as a strategy both for future-proof business innovation and for future-proof economic/ecological systems.

<sup>2</sup> <http://cdn.hetgroenebrein.nl/wp-content/uploads/2015/02/KennisKaart-Circulaire-Economie-Het-Groene-Brein-copy.pdf>, retrieved on 20 July 2017

## THE ROADMAP FOR A CIRCULAR BUSINESS MODEL

The transition from a linear to a circular business model can be seen as a journey. And not just a single journey: it is a voyage of discovery to a new continent for which a roadmap is slowly beginning to emerge. It is important to set a clear direction, to steer where possible and to make sure you are carrying the right baggage. The journey is innovative and involves trial and error. The starting point is different for every organization. While one organization is still exploring the concept, others are already taking steps toward a circular business model. This is why you can 'board' at various points on this roadmap. With this book, we provide everyone who wants to continue their circular development with the right tools they need to take steps. We consciously use the term 'organization' in this book, because we believe that large, established companies and organizations play a role alongside SMEs and start-ups. Nor do we leave out the promoting role of government, knowledge institutes and NGOs. Service-providing organizations also feature in this book.

We outline a hopeful but realistic view of circular business models and what it takes to integrate them successfully into start-ups and existing organizations. We hope that this will both encourage and help you to make strategic decisions in transitioning to a circular business model, so that the circular economy succeeds for your organization as well.





# In this book

‘We are aiming to be climate-neutral by 2020. This has encouraged our employees to think about making our processes even more effective and upgrading our residues. Our employees have ensured that we will achieve our plans.’

*André Struiker, Strategic Advisor, Waternet*

A BOOK TO INFORM AND INSPIRE

We have structured this book based on a circular innovation model developed in this study for organizations wishing to start working with the circular economy. The starting point for this model is that every organization in the circular economy begins with one or more drivers: the motivation of an organization to set itself a circular goal. Based on these drivers, a circular *strategy* is developed (Part 1). If the organization has the ambition to realize a circular strategy, it needs to steer toward it. In this study, we looked from a business management perspective at how organizations can focus on different parts of their business model in order to adapt it from a circular perspective: this is the *circular innovation model* (Part 2). It is often referred to as a circular business model, but in principle it is a business model that is guided by a circular strategy.

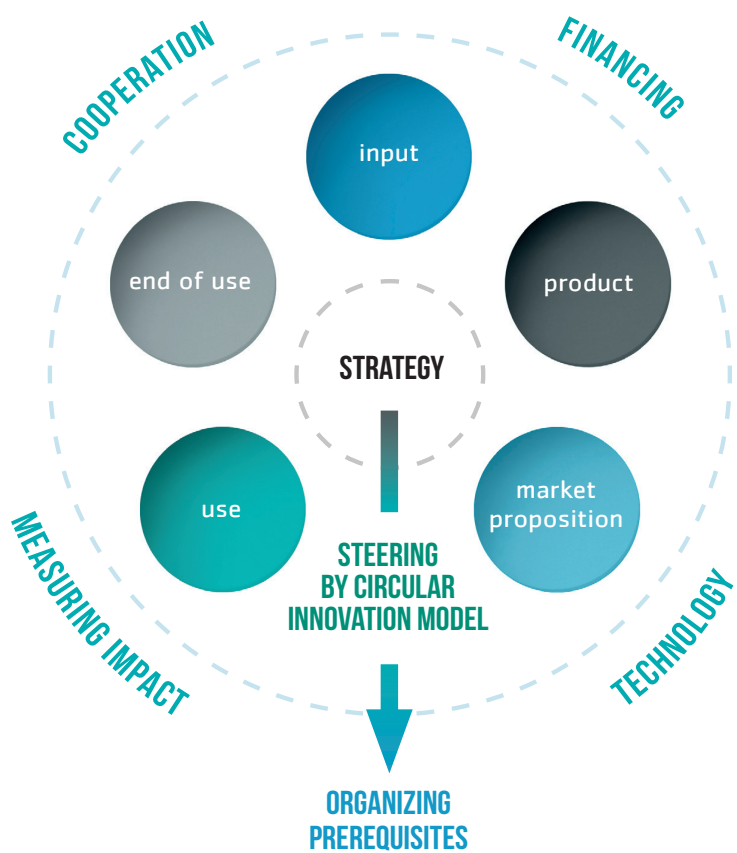


Figure 0.1.: Roadmap to a circular business model

In this study we also defined four *prerequisites* for operating successfully in a circular economy: measuring, reporting and focusing on impact - setting up cooperation - organizing financing - using technology. Organizations need to consider, based on their strategy and context, how to put each of these prerequisites in place (Part 3). In our view, this can also include organizations making a conscious decision not to use technology or, in principle, not to enter into cooperation. The art is to make balanced choices so that organizations can embed circularity in their structure in a well-considered and impactful way. Where one organization may be able to create maximum impact through *circular procurement*, it may make sense for another organization to collect used products so that they can be reused.

## PART 1: STARTING POINT FOR A CIRCULAR STRATEGY

‘Logic will get you from A to B. Imagination will take you everywhere’, said Albert Einstein. A strategic process is not a dry step-by-step plan that will mathematically lead to the right choices. Listening carefully and looking closely at the current situation and at what is happening in the outside world points to the direction where opportunities for the future lie. This often starts with a number of individuals in the organization, motivated by their personal drives and values. For this reason, the first part of the book focuses on the drivers that lead top managers and entrepreneurs to adopt a circular business model. Are they driven by a mission, risks or opportunities? Did the impetus come from fluctuations in raw material prices, or is there a market opportunity focused on use rather than possession?

The *exploration phase*, i.e. exploring whether and how the circular economy can be meaningful for an organization, is central to the first part of this book. An important aspect here is the starting point: what is the organization’s current situation? What trends and developments can be exploited immediately? We give examples of drivers that have motivated other organizations to start working with a circular revenue model. We also discuss finding the right strategy, because circular ambitions are inseparable from the organizational structure. We conclude with the strategic considerations for an organization in making the transition to a circular business model.

## PART 2: FOCUSING ON CIRCULAR AMBITIONS

How do you move from strategy to action? While some organizations choose to use circularity as a distinctive *market proposition*, others choose to keep changes within the organization and not to communicate about them externally. This is a strategic decision.

In this part we introduce the *circular innovation model*. Using this model, we discuss the options for guiding strategy based on various *focal points* within the organization’s business operations. The focal points we discuss are input, product, market proposition, use and end of use. To give concrete illustrations of these focal points, we use examples from the thirty-one organizations we interviewed. Each focal point is discussed in a separate chapter

which concludes with the most important initiatives for focusing on this specific aspect of business operations.

### **PART 3: THE RIGHT BAGGAGE FOR CIRCULAR SUCCESS**

What are the prerequisites for a successful circular business model? In this part we look more closely at four important preconditions that constitute the right baggage to carry for a conscious embedding of circularity in business operations: measuring, reporting and focusing on impact; successful cooperation in the supply chain; financing of circular initiatives; and use of technological innovation to make a circular business model a success.

# Part 1

Starting point for a  
circular strategy



# **Chapter 1 — What drives organizations in choosing a circular business model?**

'I don't want my headstone to say I was responsible for 3 million tons of waste in a lifetime. It got me thinking: what are we doing on this earth? Actually, we are a producer of waste. Everything we produce becomes waste. That gives us a huge responsibility.'

*Gé Moonen, CEO, Moonen Packaging*