



# BRIDGESTONE EUROPE

A Circular Business Model Innovation Journey

(A Part of Deliverable 5.2)

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## Executive Summary

This report provides an overview of the circular business model innovation journey guided by the R2π project team for Bridgestone EMEA (Europe, Middle East and Africa). The team customised an innovation process to suit the specific needs of the company in order to help them explore opportunities to become more sustainable and circular. Due to confidentiality agreements, this report does not provide details of Bridgestone strategy and internal business data, rather the purpose of the report is to describe the innovation journey and tools utilised.

A key challenge of the company relates to end-of-life tyres (ELT), a problem that persists in all tyre companies and in society due to the negative environmental and social impacts that this waste could result in, if not properly collected and treated. According to the European Tyre and Rubber Manufacturing Association (2018), the global tyre output is estimated at 1.5 billion units per year, which will all eventually fall into the category of end-of-life tyres.<sup>1</sup> Over the last 18 years, recovery rates for tyres have increased in Europe, and the cost of recycling has decreased due to both efficiency in management structures and new recovery routes. This shift shows that products derived from end-of-life tyres can be legitimately recognised as a valuable secondary material. About 2.6 million tonnes of end-of-life tyres (ELT) are recovered annually in Europe and 600,000 tonnes of used tyres are either reused or sent for re-treading, so the tyre industry has promoted promising economic activities that are beneficial to the environment while also creating over 10,000 jobs<sup>2</sup>, but there is still much more to be accomplished.

Therefore, Bridgestone is seeking viable business models to continue improving this situation and to continue its mission, “Serving Society with Superior Quality”<sup>3</sup>. To that end, a cross-functional team from Bridgestone and R2π was brought together in workshops to gain a deeper understanding of the current business model and context within the market as well as to innovate new business models. Based on internal and external strengths, weaknesses, opportunities and threats identified within their current business model and context, they generated and explored multiple options for future circular business models. Thereafter, they further detailed these options and mapped out bold steps required to achieve the new business models. Team members identified their most critical assumptions and planned out roadmaps to allow them to test these assumptions and move forward towards implementing a more sustainable and circular business model.

During this innovation process, facilitated design thinking methods and tools were used to identify opportunities on how Bridgestone can innovate circular business models that increase business value while simultaneously reducing negative impacts on the environment. Throughout the innovation journey, business opportunities were identified and explored, seeking to develop action plans that can take these ideas into practical activities and products for the company to become more circular.

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<sup>1</sup> <http://www.etrma.org/uploads/Modules/Documentsmanager/elt-report-v9a---final.pdf>

<sup>2</sup> <http://www.etrma.org/uploads/Modules/Documentsmanager/elt-report-v9a---final.pdf>

<sup>3</sup> <https://www.bridgestone.com/corporate/philosophy/index.html>



From this case and others in Work Package 5, it seems that the facilitated circular business model innovation process and tools can be valuable, replicable and transferable to other companies and other industries. The methods and tools used across case studies can be effectively adapted, enabling a flexible, collaborative and customised process that supports organisations transition to the next stage of circular business model development.

Furthermore, this case study shows that several factors are important to initiating and sustaining a circular business model innovation journey, and achieving outcomes. Key factors (which can be barriers and/or enablers) relevant to Bridgestone's case were:

**Company culture.** A core element of Bridgestone's company philosophy is its corporate social responsibility commitment, "our way to serve" based on their mission "serving society with superior quality"<sup>4</sup>. This provided a higher goal which circular economy thinking is compatible with, as it addresses social and environmental benefits, as well as economic ones.

**Clarity of ambition.** To create action, it is important that culture and intentions are translated into a clear ambition. Bridgestone's ambition to achieve circularity served as a focal point around which teams could engage and generate ideas.

**Investing time and resources for internal collaboration.** Taking time out of busy schedules is a significant challenge for company staff and managers. Nevertheless, the Bridgestone team demonstrated a strong willingness to invest staff time and prioritise the effort required.

**Senior-level sponsorship.** By their very nature, circular business model initiatives have the ambition to be transformational for an organisation. This therefore requires senior-level sponsorship to not only release the necessary resources, but also to give permission and support to explore solutions that are not part of 'business as usual'.

**Cross-functional collaboration.** Bridgestone brought together a cross-functional team of colleagues from different parts of the business, including: sustainability, product development, commercial, etc. enabling a rich set of ideas to be explored from a number of perspectives.

**Expertise in circular economy.** Circular economy principles provide a lens by which companies can look at their business model in new ways. Access to this expertise can be a key challenge and barrier for companies undertaking a circular business model innovation journey.

**Experience in business model innovation processes and tools.** Circular business model innovation is not generally a process which company staff have experience in executing. It combines expertise in facilitation, business acumen, and change leadership. It is therefore beneficial for companies to either train staff in tools and techniques (and enable them to maintain skills by regularly applying them), or to seek external expertise. Bridgestone benefited from the R2π team bringing this skillset to the process and recognised the positive impact it had. Furthermore, the R2π Circular Business Model Innovation Toolkit (Deliverable 5.1) and Circular Economy Transition Guidelines (Deliverable 7.2) provide additional support for companies.

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<sup>4</sup> <https://www.bridgestone.com/responsibilities/approach/index.html>



# 1 Introduction

## 1.1 Background and context

R2π – Transition from Linear to Circular is a European Union Horizon 2020 project focused on enabling organisations and their value chains to transition towards more viable, sustainable and competitive economic models and supports the European Union’s strategy on sustainability and competitiveness.

R2π examines the shift from the broad concept of a Circular Economy (CE) to one of Circular Economy Business Models (CEBM) by tackling market opportunities and challenges (businesses, consumers) as well as policy opportunities and challenges (assumptions, unintended consequences). Its innovation lies in having a strong business focus (including designing transition guidelines) as well as in the role of policy development (including designing policy packages).

The ultimate objective of the R2π project is to accelerate widespread implementation of a circular economy based on successful business models and effective policies:

- to ensure sustained economic development,
- to minimise environmental impact and
- to maximise social welfare

The mission of the project is therefore to identify and develop sustainable business models and guidelines that will facilitate the circular economy, and to propose policy packages that will support the implementation of these sustainable models.

A core part of this project is to work with organisations who are already on the journey towards developing circular economy business models, as well as those who have the ambition to do so but have not yet begun. The project has conducted case studies of 21 selected organisations, their business models and their value chains.

The chosen cases cover all five priority areas highlighted in the EU Action Plan on the Circular Economy: plastics, food waste, biomass/bio-based, important raw materials, and construction & demolition. Additionally, the cases were selected to ensure learning in each of the seven business model patterns defined by the R2π project: re-make, re-condition, circular sourcing, co-product recovery, access, performance and resource recovery, and these will be discussed in more detail in this report. To gather wide-ranging lessons from differing company sizes and maturities, the following were selected: 9 large corporations, 9 small, medium enterprises, 1 public entity, 1 public/private value chain with both government and corporate organisations and 1 ongoing social entity.

This report presents the case study of Bridgestone Europe. This organisation was chosen due to its leading role in the tyre industry in the EU and globally as well as the potential to significantly generate value through circular business models with end-of-life tyres. Moreover, Bridgestone expressed a high level of commitment and ambition to improve towards more sustainable models. The next section provides a more detailed overview of the case organisation’s business.



## 1.2 Business overview

Bridgestone Europe is a key regional subsidiary of the Japanese Bridgestone Corporation, the world's largest manufacturer of tyres and other rubber products. Bridgestone Corporation and its subsidiaries employ over 140,000 people around the world, operate 178 plants in 25 nations and sell products in more than 150 countries. In Europe, Bridgestone EMEA (Europe, Middle East and Africa) - headquartered in Brussels - operates 15 tyre and tyre-related plants, employs approximately 19,000 people a major R&D Centre and a proving ground, and its premium tyres are sold regionally and globally.<sup>5</sup>

Bridgestone is the largest investor in R&D in its industry with approx. €800 million annually.

**Industry:** tyres and diversified products

**Founded:** 1931 (Bridgestone Corporation)

**Headquarters:** Tokyo, Japan (Bridgestone Corporation); Brussels, Belgium (Bridgestone EMEA)

**Area of operation:** Bridgestone EMEA operates in more than 60 countries

**Net sales:** ¥596.1 billion (€4.93 billion) (Bridgestone EMEA in 2018)<sup>6</sup>

**No. of Employees:** 19,000 (for Bridgestone EMEA in 2018)

*FIGURE 1: RUBBER TYRES*



Source: Unsplash / Imthaz Ahamed

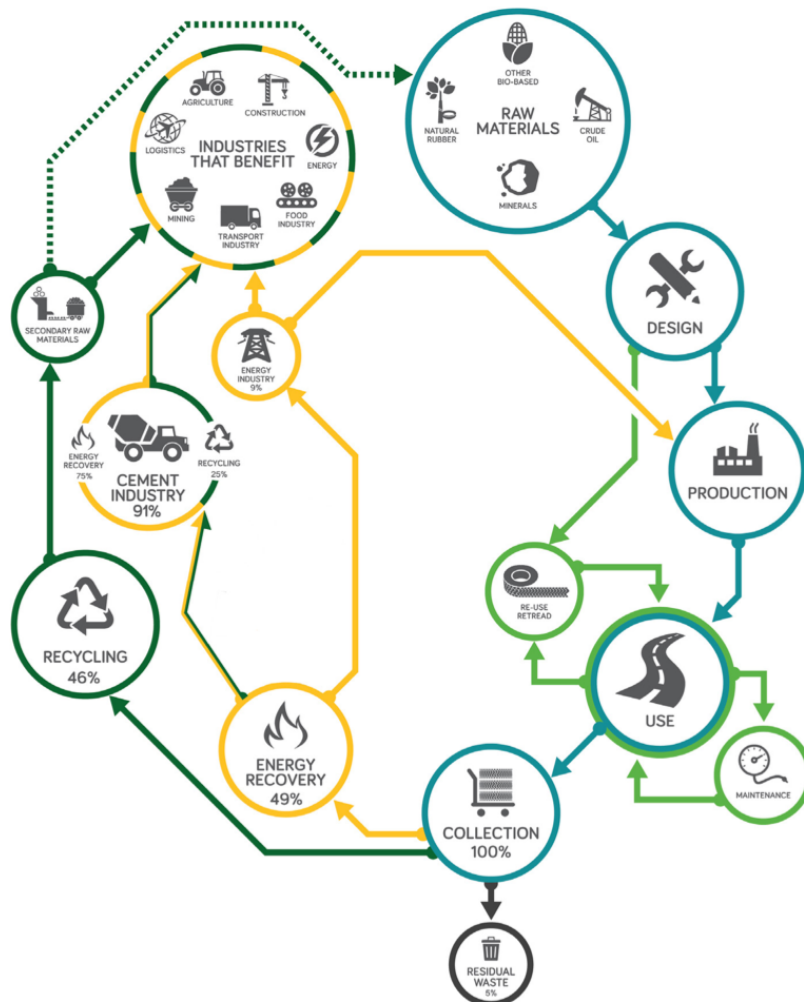
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<sup>5</sup> <https://www.bridgestone-emea.com/>

<sup>6</sup> <https://www.bridgestone.com/ir/financialdata/segment/index.html>

End-of-life tyres (ELT) can be a source for several valuable secondary raw materials. The output of the treatment process of ELT is shredded material of various sizes and types, depending on the intended uses: rubber chips or granules (70%), steel fibres (5-30%) and textile fibres (up to 15%). Moreover, ETRMA (2018)<sup>7</sup> indicates that 2.6 million tonnes of end-of-life tyres (ELT) are recovered annually in Europe and more than 600,000 tonnes of used tyres are either reused or sent for re-treading, and the tyre industry has promoted a promising economic activity that is beneficial to the environment while creating over 10,000 jobs.

FIGURE 2: CIRCULAR ECONOMY IN THE TYRE INDUSTRY



Source: ETRMA, 2015<sup>8</sup>

Hence, the industry is now striving to turn end-of-life tyres (ELT) into a more utilised resource. Collection of ELTs can be used to extend the life of a product and/or exploit the recovered materials (e.g. whole tyre,

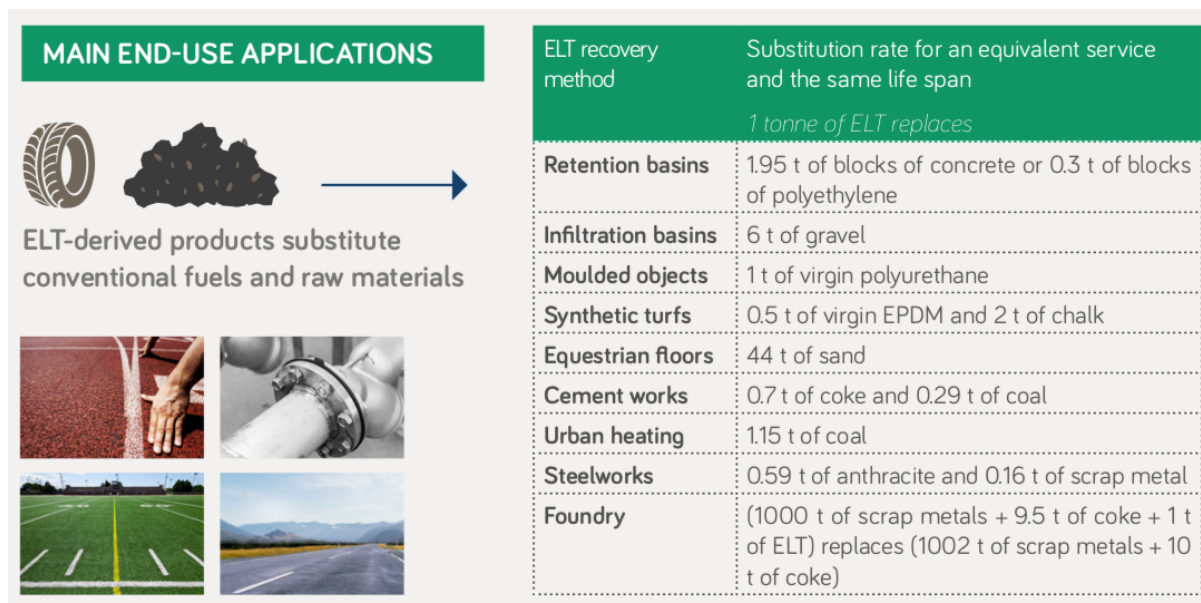
<sup>7</sup> <http://www.etrma.org/tyres/ELTs/end-of-waste-status>

<sup>8</sup> <http://www.etrma.org/uploads/Modules/Documentsmanager/elt-report-v9a--final.pdf>

chopped tyre or secondary raw material) for use in other industries such as energy and construction. The materials used to produce tyres are the following<sup>9</sup>:

- **Natural rubber** comes from para rubber trees. The properties of natural rubber include durability and abrasion resistance.
- **Synthetic rubber**, a petroleum-based product, has heat-resisting properties.
- **Carbon black** increases the strength of rubber.
- **The white powder of silicon dioxide** delivers better fuel efficiency and wet grip.
- **Oil** softens rubber.
- **Antioxidant** inhibits oxidation of rubber.
- **Sulphur** gives rubber greater elasticity.
- **Vulcanization** accelerator helps build cross-links between rubber and sulphur.
- **Polyester** is used as a material of body ply in passenger tyres.
- **Rayon** is used as a material of body ply in passenger tyres.
- **Steel** is used as a material of beads and steel belts in passenger tyres.

FIGURE 3: MAIN USE OF APPLICATIONS OF END-OF-LIFE TYRES (ELT)



Source: ETRMA, 2015 <sup>10</sup>

ETRMA (2018) <sup>11</sup> also indicates that over the last 18 years, recovery rates for ELT have positively increased in Europe. At the same time, the cost of recycling to the consumer has decreased due to both increased

<sup>9</sup> <http://www.etrma.org/uploads/Modules/Documentsmanager/elt-report-v9a---final.pdf>

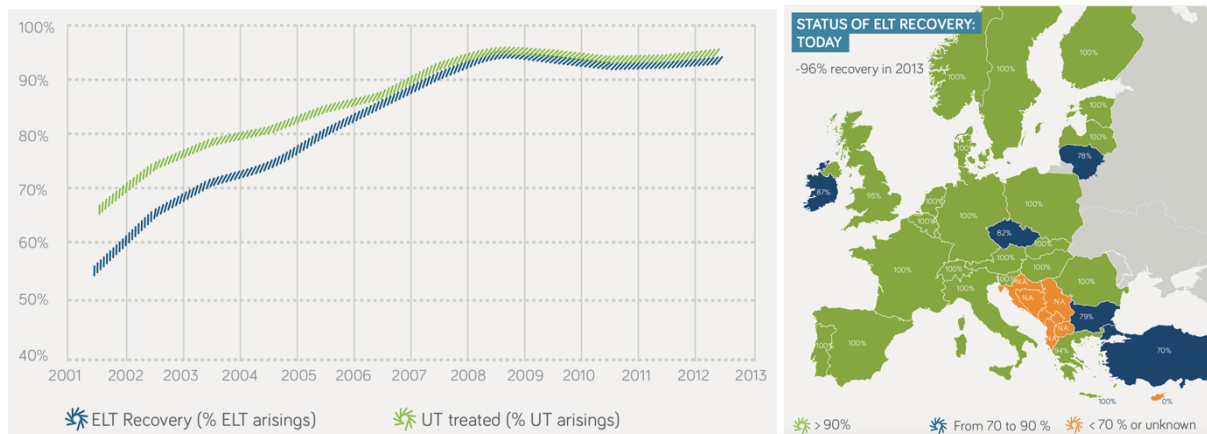
<sup>10</sup> <http://www.etrma.org/uploads/Modules/Documentsmanager/elt-report-v9a---final.pdf>

<sup>11</sup> <http://www.etrma.org/tyres/ELTs/material-recovery>



efficiency in management structures and new recovery routes,<sup>12</sup> thus providing a larger source of these valuable secondary raw materials.

FIGURE 4: END-OF-LIFE TYRES (ELT) RECOVERY RATE IN EUROPE



Source: ETRMA, 2015<sup>13</sup>

In May 2012, the Bridgestone Group announced its long-term environmental vision for 2050 and beyond for three activity areas: existing in harmony with nature, valuing natural resources, and reducing CO<sub>2</sub> emissions. Specifically, Bridgestone aims to:

- Be in balance with nature (Contribution > Footprint)
- Move towards 100% sustainable materials
- Contribute to globally agreed targets (Over 50% reduction of CO<sub>2</sub> emission)

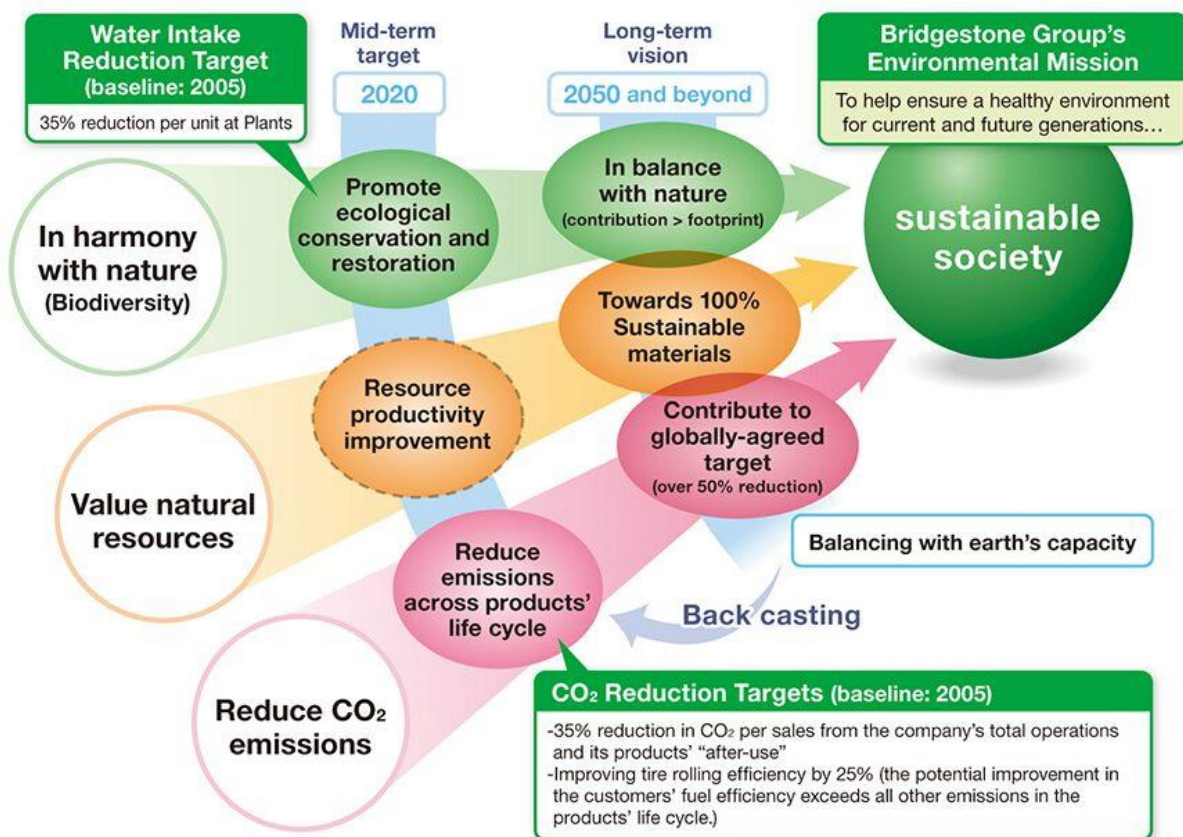
These initiatives are conceived to help realise the sustainable society described in their Environmental Mission Statement, which outlines the direction of the long-term environmental aspirations.<sup>14</sup>

<sup>12</sup> <http://www.etrma.org/tyres/ELTs/worldwide-perspective>

<sup>13</sup> <http://www.etrma.org/uploads/Modules/Documentsmanager/elt-report-v9a---final.pdf>

<sup>14</sup> <https://www.bridgestone.com/responsibilities/environment/index.html>

FIGURE 5: BRIDGESTONE'S LONG TERM ENVIRONMENTAL VISION 2050



Source: Bridgestone Public Website<sup>15</sup>

In addition, Bridgestone owns the Bandag brand, which is a supplier of premium tyre retreads and retreading systems. The re-use of tyre casings and retreads contain up to 75% recycled and reused material, contributing further to sustainability and circular economy. Premium new tyre casings are made to last a second or a third life as a retread. Re-using the worn casing as the main retread component saves up to 70 litres of oil, up to 32 kilograms of rubber and 14 kilograms of steel that would have been used had the worn tyre been replaced by a new tyre.<sup>16</sup>

#### HIGH-LEVEL BUSINESS MODEL SUMMARY

Bridgestone provides customers high quality tyres that are sold under the Bridgestone, Firestone, Dayton and other brand names for passenger cars, trucks, buses and all types of vehicles. Trucks, buses and aircraft tyres can be re-treaded one or more times before reaching the end-of-life tyre status. At the end of life, the tyres are collected by different management schemes in Europe. According to the latest ETRMA

<sup>15</sup> <https://www.bridgestone.com/responsibilities/environment/>

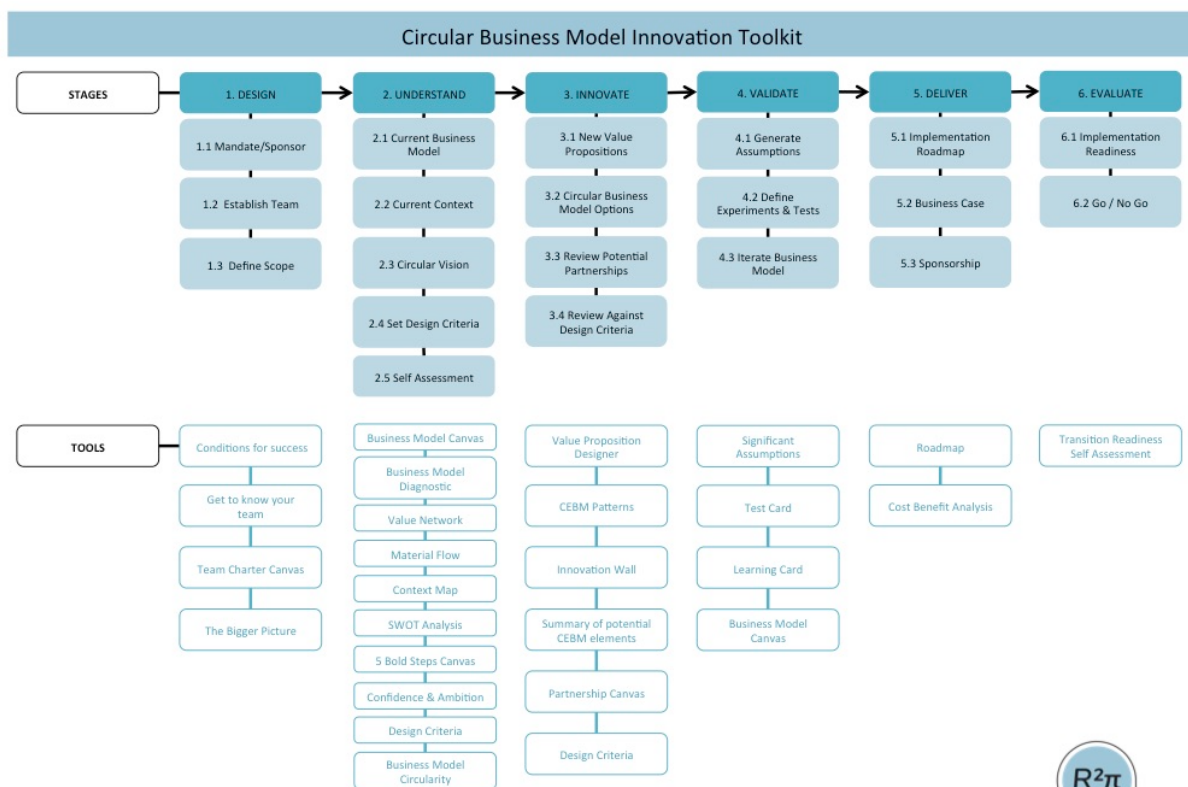
<sup>16</sup> <https://www.bandag.eu/en/think-environment/think-environment/>

report, “ELT Management figures 2016”, 59% is recovered as material, 37% is recovered as energy and the destination of remaining 7% is unknown. Based on this, there is a potential to increase the recovery of end-of-life tyres as material in line with circular economy objectives. Landfilling of tyres is already banned by EU directive 1999/31/EC. Current business models need to be improved towards circular economy, where end-of-life tyres can be recovered as much as possible as material to produce other valuable goods.

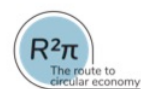
### 1.3 The circular business model innovation process

The case study process is a circular business model innovation journey based on the process and tools in Figure 6 below, however, customised in collaboration with Bridgestone to meet their specific needs and ambitions. It was structured in a preparatory phase of meetings and interviews with key people follow by two workshops with Bridgestone collaborators in a multi-disciplinary team of about twenty people. Generally, the innovation journey covers six main stages: 1) design, 2) understand, 3) innovate, 4) validate, 5) deliver and 6) evaluate. The innovation journey process would ideally be facilitated all the way to the company’s final decision to implement a new circular business model in the market. In this case, due to the time constraints of both the R2π project and the Bridgestone team, the journey was customised and led into the validate and deliver stages where further steps were defined for continuation beyond the project. The figure below shows the process stages, their sub components and key tools.

FIGURE 6: GENERIC CIRCULAR BUSINESS MODEL INNOVATION PROCESS AND TOOLS



This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 730378



Source: R2π Deliverable 5.1



## 1.4 Report outline

The first chapter introduction has provided a high-level overview of the case and innovation journey process. Chapter 2 presents a more detailed description of the innovation journey stages: design, understand, innovate, validate, deliver and evaluate. The chapter will show the big picture surrounding the business and the context in which it operates as well as the key external factors. Then, the analysis of the current business at each building block level of the business model, including the circularity of the business, the financials and the strengths and weaknesses will be discussed. This is followed by the innovation of new circular business model options and the associated assumptions and the next steps to further test and evaluate the circular business model. Chapter 3 draws conclusions and recommendations for the continued transition to circularity.



## 2 Circular Business Model Innovation Journey

### 2.1 Design

The objective of the design stage is to establish to what extent the circular economy already has significant footholds in the organisation and to design the upcoming innovation process to take the organisation from this current state to an improved future state. For circular business models to be successful, there is a need to involve dedicated people from across the entire organisation and sometimes beyond to external collaborators. Therefore, establishing the right team, evaluating their influence and competencies, and defining the roles they will play throughout different parts of the innovation journey needs to be a priority. Only then, can an organisation properly scope the process and next steps.

#### 2.1.1 Mandate & Sponsor

There are several questions to understand at what level of CE ambition is mandated (i.e., who drives CE in the organisation and why):

1. Is there a clear circular ambition within the organisation?
2. At what level is that mandated within the organisation (e.g executive level; business unit; project level; individual)?
3. What evidence is there that the organisation can sustain attention and focus throughout the entire business model innovation journey?
4. What level of access does the organisation have internally (within the organisation) & externally to other key stakeholders?

R2π found that Bridgestone has a strong ambition towards more sustainable and circular business models, all the way up to executive level management. Their desire is to move beyond current solutions such as just retreading and using discarded tyres for energy generation to new solutions that can produce higher sustainable value. They had already named a high-level manager to a strategic position to guide circular economy activities and were ready to set up a task force to investigate possibilities.

#### 2.2.2 Establish Team

Innovation journeys can be long and complex, and therefore there is a need to define a core team & wider cohort that will participate in each stage of the journey. The team needs to include a range of managers and employees to ensure full coverage and proliferation through every relevant department. This will ensure that every aspect of the business is being considered while working towards a new circular business model.

The core team at Bridgestone consisted of a wide selection of decision-makers and representatives from across the organisation, including different departments such as strategic planning, research and development (R&D), Corporate Social Responsibility (CSR), legal, sales, marketing, quality, manufacturing, environment, health and safety (EHS), procurement along with the external CE and innovation support from the R2π team.



### 2.2.3 Define the Scope

Initially, discussions took place with the team and sponsors to define what can be achieved in the upcoming circular business model innovation process to meet the needs of the organisation while remaining within the time and resources available. The clear definition of scope for the circular business model innovation journey helps to provide a shared understanding of the current situation in the organisation and willingness for working towards improvements. It was agreed that a series of online meetings and a two-day workshop would be held to follow the stages of understand, innovate, evaluate and deliver using some but not all of the described tools in order to create some circular business model options for Bridgestone to then further investigate and test.



**Source:** Bridgestone and R2π Workshop.

## 2.2 Understand

Before establishing the future vision and ambition of the business, it is imperative to get a common understanding of the current business model and the context in which it operates. For instance, to understand the impact that changes in customer needs, demographics or technology can have on the future of the business. Therefore, the tasks are to understand the current business model, its core strengths and weaknesses and evaluate how well these are aligned against the opportunities and threats of the current context. This stage can be accomplished with some of the recommended tools: adapted business model canvas, context map, SWOT analysis and circular vision.

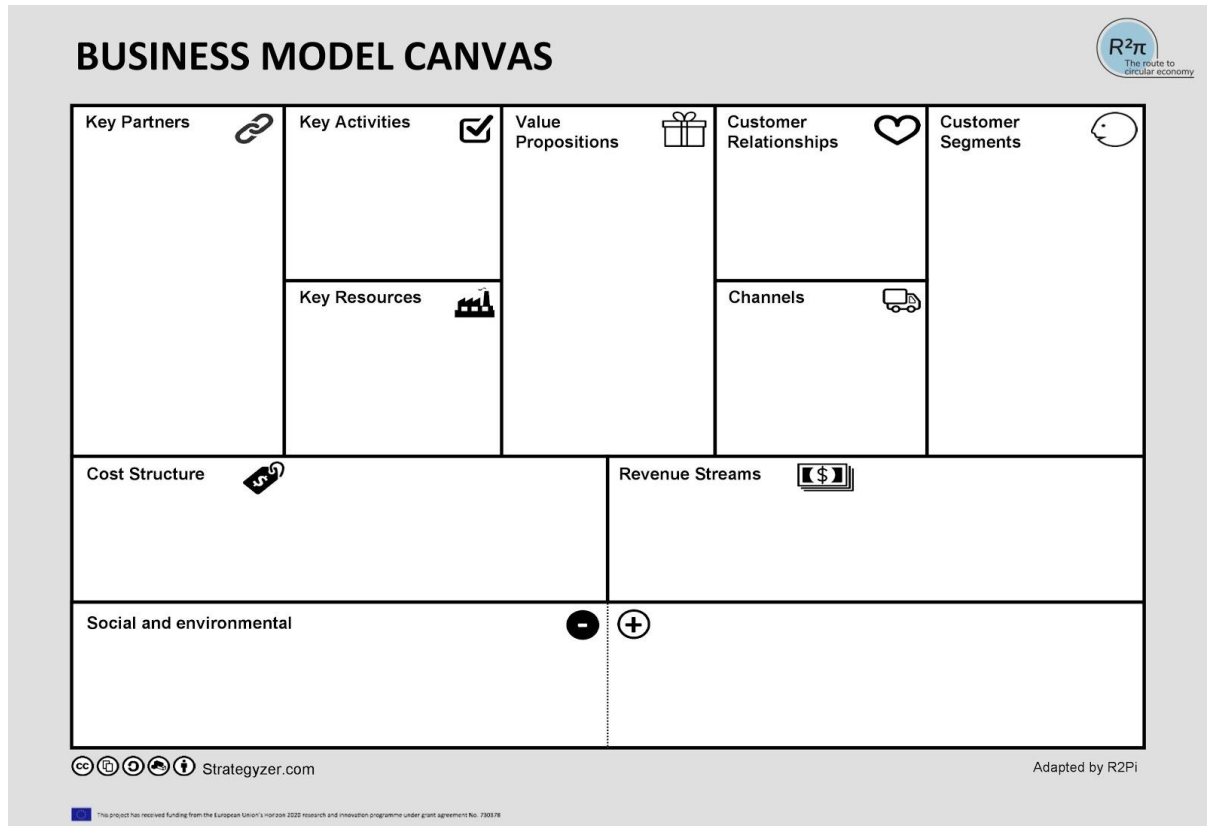
### 2.2.1 Current Business Model

This stage is designed to document the current state of the business by breaking down all activities into digestible building blocks. This provides an overarching view of the key aspects of the current business model. Also, it provides a clear and common understanding of the current state business model between all stakeholders involved in the process.

In the workshop, the participants were divided into three different teams mixed with collaborators from different departments or disciplines. Then, each of the participants were encouraged to provide their own personal insights about each of the key sections in the business model canvas and discuss in order to gain common understanding.

In this regard, the business model canvas introduced in the workshop helped to describe, visualise and assess the business model and to describe the rationale of how the organisation creates, delivers and captures value. The R2 $\pi$  adapted version of the business model canvas adds a special focus on social and environmental costs and benefits to highlight the importance of sustainability and circularity in providing value also to people and planet (see Figure below).

FIGURE 7: ADAPTED BUSINESS MODEL CANVAS



Source: Adapted by R2 $\pi$ <sup>17</sup> from the original by Alexander Osterwalder

It is important that the canvas is completed, one section at a time, in the following order:

- Step 1: **Customer Segments:** Who are the key customers? At least the top three segments should be listed (those segments providing the most revenue).
- Step 2: **Value Propositions:** What are the key products and services? What is the job that gets done for the customer?
- Step 3: **Revenue Streams:** What are the top three revenue streams? If value is given for free, these are to be added here too.
- Step 4: **Channels:** How does the organisation communicate with customers? How do is the value proposition delivered?
- Step 5: **Customer Relationships:** What type of relationships are built? How these relationships maintained?
- Step 6: **Key Activities:** What is done daily to run the business? Which activities are the most critical to delivering the value?

<sup>17</sup> <http://www.r2piproject.eu/wp-content/uploads/2019/08/3.-R2Pi-Busines-Model-Canvas.pdf>

- Step 7: **Key Resources:** What knowledge, means, people and money are needed to run the business?
- Step 8: **Key Partners:** Which partners are critical, without whom the business would not succeed (not suppliers)?
- Step 9: **Cost Structure:** What are the largest costs (coming from key activities and key resources)?
- Step 10: **Social and Environmental Positives:** What are the key positive impacts that are created for people and planet?
- Step 11: **Social and Environmental Negatives:** What are the key negative impacts that the model has on people and planet?

This participatory approach provides an excellent opportunity to gain information from different perspectives and different expertise across multiple departments of the organisation. Each of the three teams first created their versions (see example in Figure 8 below), and then the entire group discussed together to create one common compiled version (see Figure 9 below).

*FIGURE 8: EXAMPLE OF WORKSHOP BUSINESS MODEL DISCUSSION*



**Source:** Bridgestone and R2π Workshop (blurred due to confidentiality)



FIGURE 9: COMPILED BUSINESS MODEL CANVAS



**Source:** R2 $\pi$  Project (blurred due to confidentiality)

The output of this discussion is a clear and common understanding of the current state business model. All participants in the innovation journey need to understand the current linear business model as a basis for developing ideas for more sustainable and circular models. After having looked internally at the business, the next step is to consider the surrounding context and conditions in which the business operates.



**Source:** Bridgestone and R2 $\pi$  Workshop.

## 2.2.2 Current Context

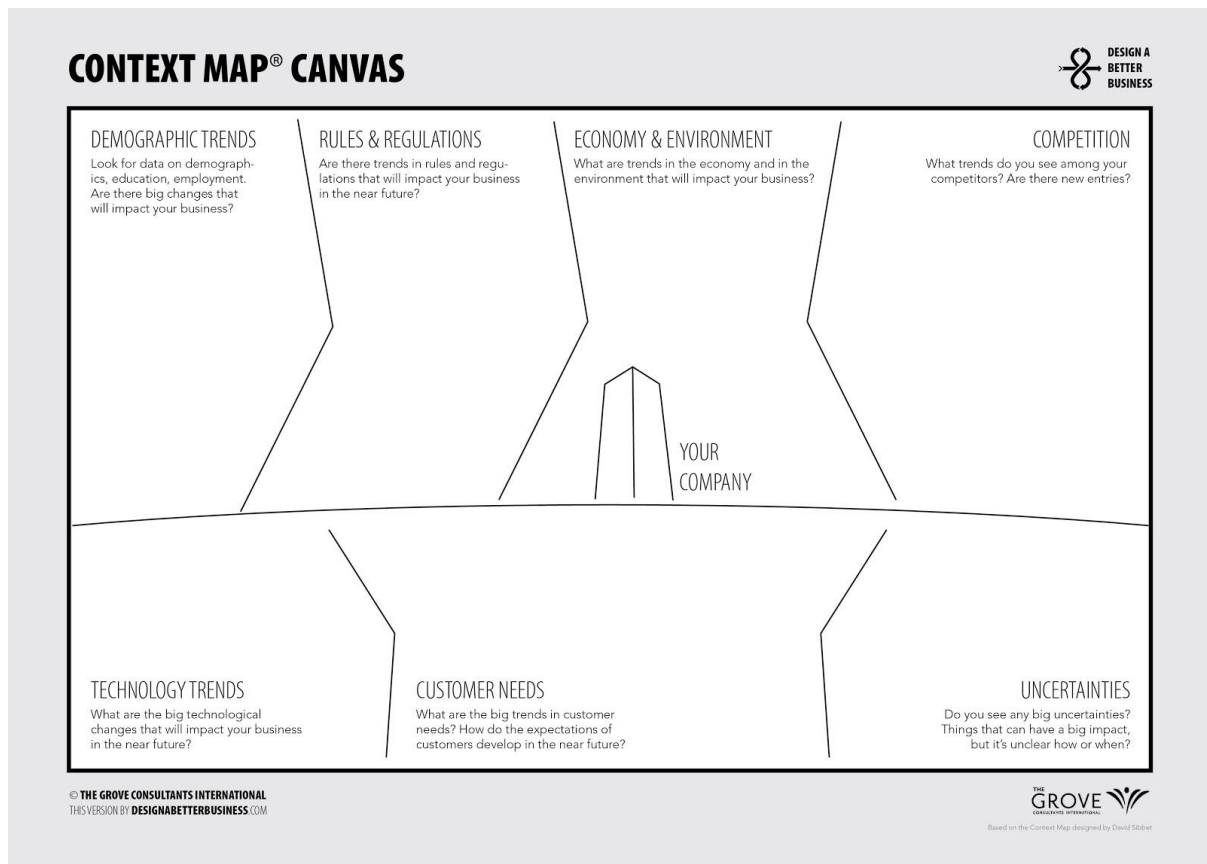
Before diving straight into creating new business models, there is a need to have a good understanding of the existing context of the business (i.e., broader market, trends, rules, competition, etc.). By mapping out the context (i.e., external factors that affect a business), it helps to look for drivers outside the organisation and identify forces that could shape the business now and in the future.

The context canvas (see Figure below) is meant to help the team expand their thinking beyond the boundaries of product development and the organisation itself. The results will help to have a deeper



conversation about what is going on in the world around it and what is changing that will affect the business in the future.

FIGURE 10: CONTEXT MAP



Source: Design a Better Business adaptation<sup>18</sup> of original by David Sibbet of the Grove International

Based on the same procedure followed in the past exercises, the participants of the 3 groups provided their inputs and discussed the context (see example in the Figure below).

<sup>18</sup> <https://designabetterbusiness.tools/tools/context-canvas>



FIGURE 11: EXAMPLE OF WORKSHOP CONTEXT DISCUSSION



**Source:** Bridgestone and R2π Workshop (blurred due to confidentiality)

Moreover, some of the key elements from the three groups of participants were integrated into one context canvas as seen below, and these will be further discussed in the following sections.

FIGURE 12: COMPILED CONTEXT MAP



**Source:** R2π Project (blurred due to confidentiality)

### Demographic Trends

As part of the context canvas, the identification of global demographic trends helps the business to identify potential challenges or opportunities to create long-term value by developing or adapting products to future demands. In this regard, the participants in the workshop highlighted key trends that will impact business operations, such as population growth and ageing population, urbanization and mega cities, the increase of mobility and others. Based on these trends, future business models will be subject to changes in order to produce high quality products and/or services to meet these changing needs.



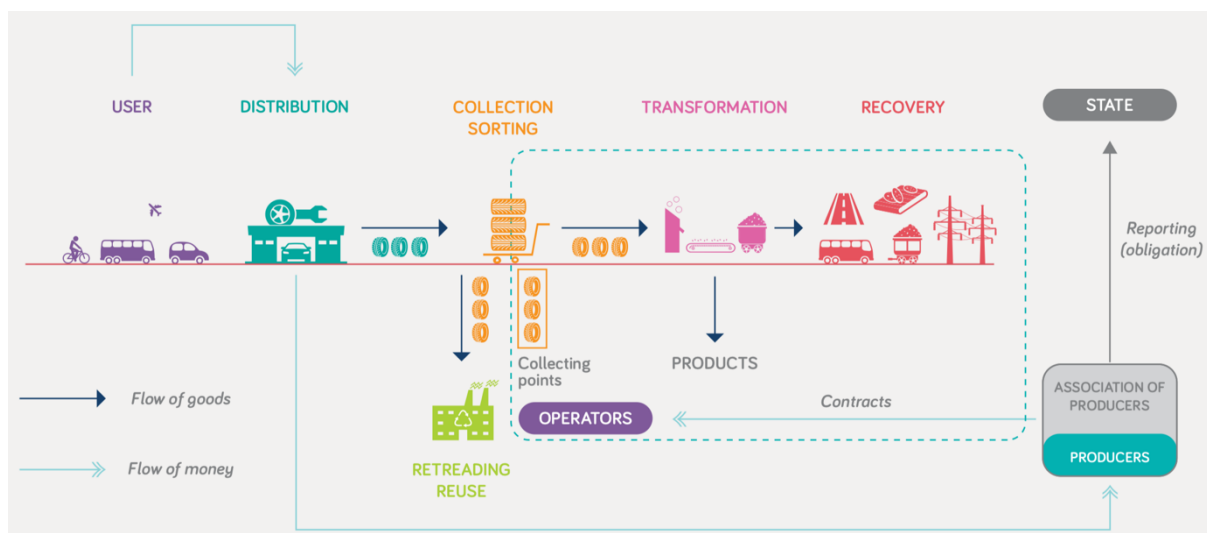
## Rules and Regulations

Participants in the workshop provided insightful input related to legislation and regulations that are important to consider in their present and future business operations. For example, some regulations identified had to do with the vehicles and materials themselves, while others dealt with effects such as noise, health, CO<sub>2</sub> emissions and customer safety.

Furthermore, the European Commission (2019) indicates that the annual end-of-life tyres (ELT) provides about 3 million tons of materials that could be reused in products. Despite the existence of a sufficient number of facilities and treatment capacity, there is a lack of a demand for such amount of these materials, and results in the export of a significant portion of them.<sup>19</sup>

The European Directive 2008/98/EC<sup>20</sup> on waste, introduces the concept of Extended Producer Responsibility where producers would be required to manage the waste after consumer use. Not all European countries have established such a scheme, and those that have are not always consistent with each other. It is in the interest of this commitment to develop applications and technologies to reuse secondary raw materials in a high added value European industry, thus increasing sustainability and reducing CO<sub>2</sub> emissions while increasing jobs in Europe.

FIGURE 13: PRODUCER RESPONSIBILITY SCHEME



Source: ETRMA, 2015<sup>21</sup>

Moreover, ETRMA's Vision 2030<sup>22</sup> indicates that the European tyre industry and policy makers should work towards a sustainable regulatory framework in order to incentivize innovation, and help the sector both to maintain its economic and technological leadership and to meet its societal objectives (road

<sup>19</sup> <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/european-strategy-market-development-innovative-use-tyre-recycled-materials>

<sup>20</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098>

<sup>21</sup> <http://www.etrma.org/uploads/Modules/Documentsmanager/elt-report-v9a---final.pdf>

<sup>22</sup> [http://www.etrma.org/uploads/Modules/Documentsmanager/20150706\\_etrma\\_trifold\\_05-15\\_final\\_print.pdf](http://www.etrma.org/uploads/Modules/Documentsmanager/20150706_etrma_trifold_05-15_final_print.pdf)

safety, environmental performance). The regulatory environment should encourage proactive action, and consist of predictable, smart, effective and enforced legislation. The ETRMA suggests the following: commitment to quality (standards), commitment to regulatory compliance (CO<sub>2</sub> and noise emission reductions through tyre technology; promotion of extended producer responsibility for end-of-life tyre collection and treatment), commitment to road safety, commitment to sustainability (e.g. production design to end-of-life, weight reduction, voluntary commitment to phase out health hazardous oils).

### Economy and environment

Another important block in the context analysis is the economic and environmental trends section that helps to discuss how these areas may impact business operations in the future. The participants in the workshop highlighted key trends such as circular economy, raw material availability, cost competitiveness, the impact of microplastics in the environment and among others. All of these are factors to consider when innovating and developing ideas for new and more circular business models.

### Competition

Bridgestone is the largest tyre manufacturer in the world, but three other companies were identified as their biggest competitors. Michelin, Goodyear and Continental are important players in the international and the European markets.

### MICHELIN

Michelin is a French tyre manufacturing company that started as a natural rubber processing company in 1889 and has contributed to key innovations and patents in the industry. It quickly expanded around the globe and in 2017 it produced 190 million tyres in 70 factories in 17 countries around the globe, selling in 170 countries, with a total of 114,000 employees, creating a revue of €22.03 billion.<sup>23</sup> Michelin has set itself ambitious goals to become more sustainable in their production and more energy efficient by 2020. Generally, it subscribes to the 4R strategy of circular economy: reduce, reuse, recycle and renew, which is implemented in various ways. In Germany, for example, Michelin has installed photovoltaics on the roofs of several offices, and the parking lots offer charging for electrical cars and bicycles, as well as investing in resource efficiency through innovative energy recovery at some of their production sites.<sup>24</sup>

Michelin also realised that their transportation logistics make up a large share of emissions and are trying to reduce unnecessary emissions by optimizing transportation, increasing fill rates, expanding multi-model transport systems, partnering with eco-friendly shipping companies and promoting co-driving.<sup>25</sup> Innovation is also key, and therefore, the company is trying to reduce the energy that cars or trucks lose due to the rolling resistance of the tyres by seeking alternative materials to reduce the amount of energy lost due to this resistance and resulting in less fuel consumption and thus less CO<sub>2</sub> and NO<sub>x</sub> emissions. Michelin recycles most of the materials used in the production of tyres, and in Europe, 95% of their end-of-life-tyres were recycled, 97% in Brazil.<sup>26</sup> In 2014, they began investing in the Livelihood Carbon

<sup>23</sup> Michelin (2018): Über uns. Retrieved from <https://www.michelin.de/unternehmen/Das-Unternehmen-Michelin>

<sup>24</sup> Michelin (2018): Unser Engagement. Retrieved from <https://www.michelin.de/unternehmen/unser-engagement>

<sup>25</sup> Michelin (2019): Development and Sustainable Mobility. Retrieved from <https://www.michelin.com/en/sustainable-development-mobility/environment/supply-chain/>

<sup>26</sup> Michelin (2017): Sustainability. Retrieved from <https://www.michelinman.com/US/en/why-michelin/sustainability.html>



Investment Fund, which supports afforestation, agroforestry and other carbon sequestration projects in the Global South to help reduce CO2 emissions and generate carbon credits.<sup>27</sup>

## GOODYEAR

Goodyear is a US American tyre manufacturer founded in 1898. It produces tyres for automobiles, trucks, motorcycles, race cars, airplanes and heavy machinery. Goodyear is today the 3<sup>rd</sup> largest producer of tyres in the world. The company has about 64,000 employees around the globe with 48 production sites in 22 countries, creating an annual revenue of approximately €13.88 billion (in 2017).<sup>28</sup> Goodyear has set itself targets to reduce energy, water and solvents by 2020. Between the year 2010 and 2012, they have cut water use by 25%. Since 2006, the company has been applying a no waste to landfill policy, which has forced them to reduce, reuse and recycle their waste. Overall the tyre manufacturer is on track to achieve its ambitious goals until 2020.<sup>29</sup>

Goodyear employs researchers and scientist to further improve the materials and technology used, with one of their priorities being to further reduce the rolling resistance of tyre material, in order to cut fuel consumption and thus carbon emissions. Materials are assessed in terms of their life cycle and their potential to be recycled and upcycled, with the ambition to recycle as much and waste as little as possible. Some of their production sites in Germany and Turkey are ISO 50001 certified, and this system has helped them to improve energy efficiency and reduce GHG emissions.<sup>30</sup> Lastly, the Goodyear company also targets end of life tyres (ELT) with programmes to ensure that ELTs are properly managed and recovered (in Europe 92% of their ELTs are recovered).<sup>31</sup>

## CONTINENTAL AG

Continental is the fourth largest tyre manufacturer worldwide, founded in 1871 in Germany and producing tyres, brakes and other parts for the automotive industry. It has 245,226 employees in 60 countries with a revenue of €55 billion in 2017.<sup>32</sup> Continental has an environmental strategy to incorporate sustainability into the complete value chain of production and the full life-cycle of their products. Through regular life-cycle assessments, Continental identifies limitations of their production and opportunities to improve

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<sup>27</sup> Michelin (2019): Low Carbon Products. Retrieved from <https://www.michelin.com/en/sustainable-development-mobility/environment/low-carbon-products/>

<sup>28</sup> Goodyear (2019). Auf einen Blick. Retrieved from [https://www.goodyear.eu/corporate/de/our-company/auf\\_einen\\_blick.jsp](https://www.goodyear.eu/corporate/de/our-company/auf_einen_blick.jsp)

<sup>29</sup> Goodyear (2019). Corporate Citizenship. Retrieved from <https://www.goodyear.eu/corporate/de/our-responsibilities/corporate-citizenship/we-care-about-our-environment.jsp>

<sup>30</sup> Goodyear (2017). Sustainability Report. Retrieved from: <https://corporate.goodyear.com/documents/responsibility/2017-corporate-responsibility-report-updated.pdf>

<sup>31</sup> Goodyear (2018). Corporate Responsibility Report. Retrieved from <https://corporate.goodyear.com/documents/responsibility/2018-corporate-responsibility-report.pdf>

<sup>32</sup> Continental AG (2019). Unternehmen. Retrieved from: <https://www.continental-corporation.com/de/unternehmen/geschichte>



upon them. Continental is striving to reduce water and energy consumption as well as waste production by 20% by 2020 (baseline 2013).<sup>33</sup>

Resource efficiency is important to the company, and Continental therefore, focuses on the repair or partial replacement instead of fully manufacturing new products. At the same time, for recyclability of their products, materials are carefully evaluated in terms of their recyclable properties. Scrap tyres are, for example, used in the cement industry and the silica and steel components are used as other secondary raw materials, such as the steel and textile parts being separately recycled and/or shredded and then used for insulation, sport-grounds construction and/or in road construction.<sup>34</sup> Truck tyres are also retreaded after inspection, rather than producing completely new tyres.<sup>35</sup>

### Technology Trends

Technology trends can be key disruptors which have major impacts on the future business. This was also an important section of the context canvas, where participants mentioned some key points that have to be considered in the future such as sustainable technology, autonomous driving, CO<sub>2</sub> reduction mechanisms, Internet of Things (IoT) and Artificial Intelligence (AI), and e-mobility. Any or all of these technologies could become common features in the future and are critically linked to the development of new products and services.

### Customer Needs

Mapping trends of customer's needs and desires are fundamental components in understanding how Bridgestone creates value for customers. The participants discussed various trends and possibilities in customer needs: flexible mobility, car sharing, all season tyres, safety, sustainable tyre production, silent tyres, and customer's peace of mind. Many of these trends highlight the need to improve on traditional business models and move to more sustainable and circular business models.

### Uncertainties

The identification of uncertainties is highly important in order to identify potential risks in future business operations. In this block of the canvas, the participants mentioned some uncertainties such as willingness to pay for tyres and service, competition with emerging companies, diversity affecting consumer needs, potential sudden economic crises and climate change among others. In dealing with these uncertainties and the other factors discussed, an analysis of the most critical elements should be conducted, as in the next section.

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<sup>33</sup> Continental AG (2019). Environmental Strategy. Retrieved from <https://www.continental-corporation.com/en/sustainability/environment/environmental-strategy-63142>

<sup>34</sup> Continental AG (2019). Recycling und Verwertung. Retrieved from <https://www.continental-corporation.com/de/nachhaltigkeit/umwelt/recycling-und-verwertung-63092>

<sup>35</sup> Continental AG (2019). Company. Retrieved from <https://www.continental-tyres.com/specialty/company/sustainability/contilifecycle/clc-plant-in-hannover-stoecken>

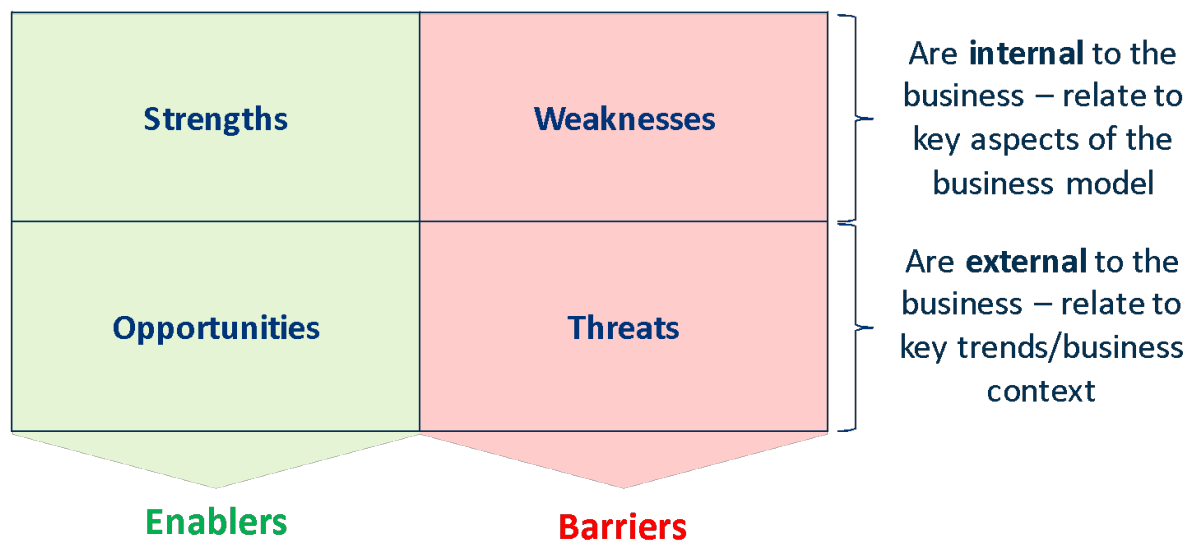


### 2.2.3 SWOT Analysis

#### Strengths, Weaknesses, Opportunities and Threats (SWOT)

This section contains a discussion of the strengths, weaknesses, opportunities and threats (SWOT) associated with the current state business model and its context. As is customary in SWOT analyses, the strengths and weaknesses should be derived from INTERNAL factors of the organisation's business, and these are extracted primarily from the business model canvas discussion. Whereas, the opportunities and threats should be derived from EXTERNAL factors surrounding the organisation, and these are extracted primarily from the context map discussion (exemplified in the diagram below).

FIGURE 14: SWOT ANALYSIS FRAMEWORK



Source: R2π Project<sup>36</sup>

The discussions in the workshop led participants to identify the SWOT of the current Bridgestone model. This exercise was also done in the three groups, with each one identifying various factors and then prioritising them into the top two for each part of the SWOT. The results help to provide a common understanding of the factors important to the current business model and context, as well as directly pointing to potential for improvements for the innovation stage and the future state business models. An example is shown in the following figure.

<sup>36</sup> <http://www.r2piproject.eu/wp-content/uploads/2019/08/7.-SWOT-ANALYSIS.pdf>



FIGURE 15: EXAMPLE OF WORKSHOP SWOT DISCUSSION



**Source:** Bridgestone and R2π Workshop (blurred due to confidentiality)

Now that a clear and common understanding of the current state has been reached, the focus can move towards the future and where the company envisions its potential.



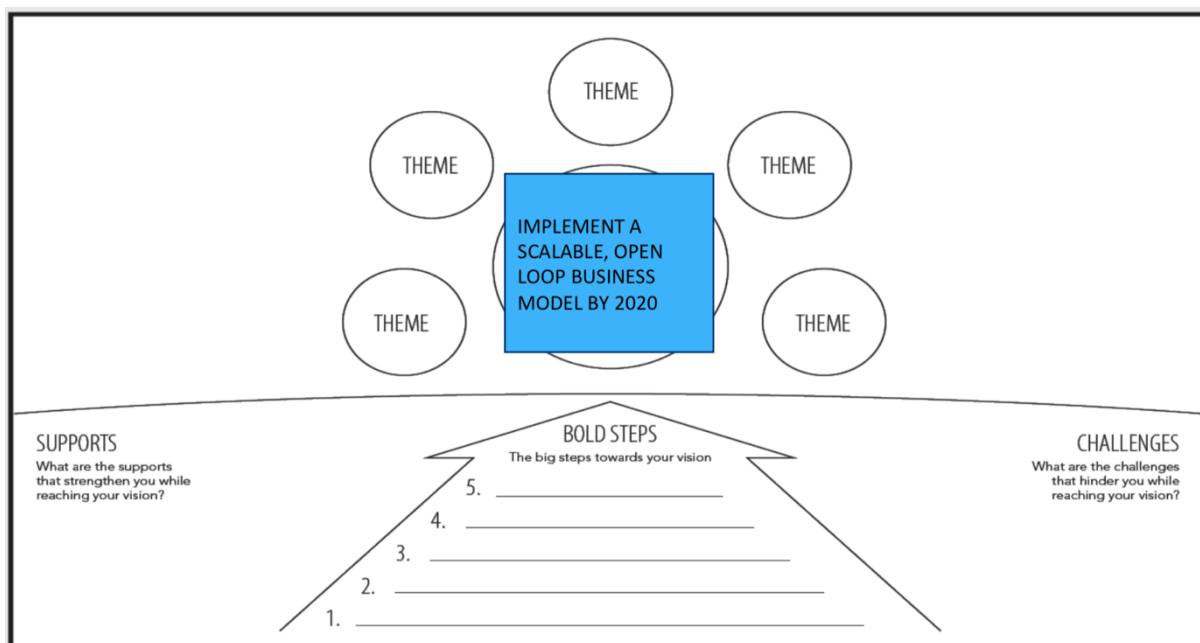
**Source:** Bridgestone and R2π Workshop.

#### 2.2.4 Circular Vision

As important as it is to know where to start from, it is even more important to know where to go. Therefore, the establishment of a circular vision helps the organisation create a clear direction of travel (also integrated with the core principles of a circular economy). A clear vision brings focus and provides an anchor point for making bold strategic choices and drives the search for new circular business models. A clear and compelling circular vision provides direction for the business model and strategic decision making. At this point, the vision canvas can be used to discuss which innovations can take place and which options are suitable for an immediate testing phase.

In some cases, the vision may be derived from corporate strategy and the existing company vision, or in others, it can be an opportunity to begin a new discussion around the future direction. In the case of Bridgestone, there is the overall company mission of “Serving Society with Superior Quality”<sup>37</sup> and there is already some circularity happening with the retreading of tyres (which is a closed-loop system). Therefore, the team had already moved towards the idea of a “near star” or shorter-term goal as opposed to a “north star” or longer-term goal, as well as the direction towards an open loop business model where recovered tyres may become part of another value chain. So, the near star vision became, “implement a scalable, open loop business model by 2020”, which set a strong challenge for the team to innovate ideas with immediate potential.

FIGURE 16: VISION CANVAS



**Source:** Design a Better Business adaptation<sup>38</sup> of original by David Sibbet, of the Grove International.

The vision canvas can be used to discuss what themes are important to the success of the vision as well as supports and challenges (enablers and barriers) that are on the horizon. It will be revisited again later in the process when discussing actions and creating bold steps to achieve the vision.

## 2.3 Innovate

The main focus during this stage should be on designing several feasible options for value creation and new business models. There is the need to review these against design criteria and chose only one option that will be carried all the way through the stages. At a later stage, it is possible to return to these options if it becomes impossible to operationalise (failure to validate) the first business model option and thus,

<sup>37</sup> <https://www.bridgestone.com/corporate/philosophy/index.html>

<sup>38</sup> <https://designabetterbusiness.tools/tools/5-bold-steps-canvas>

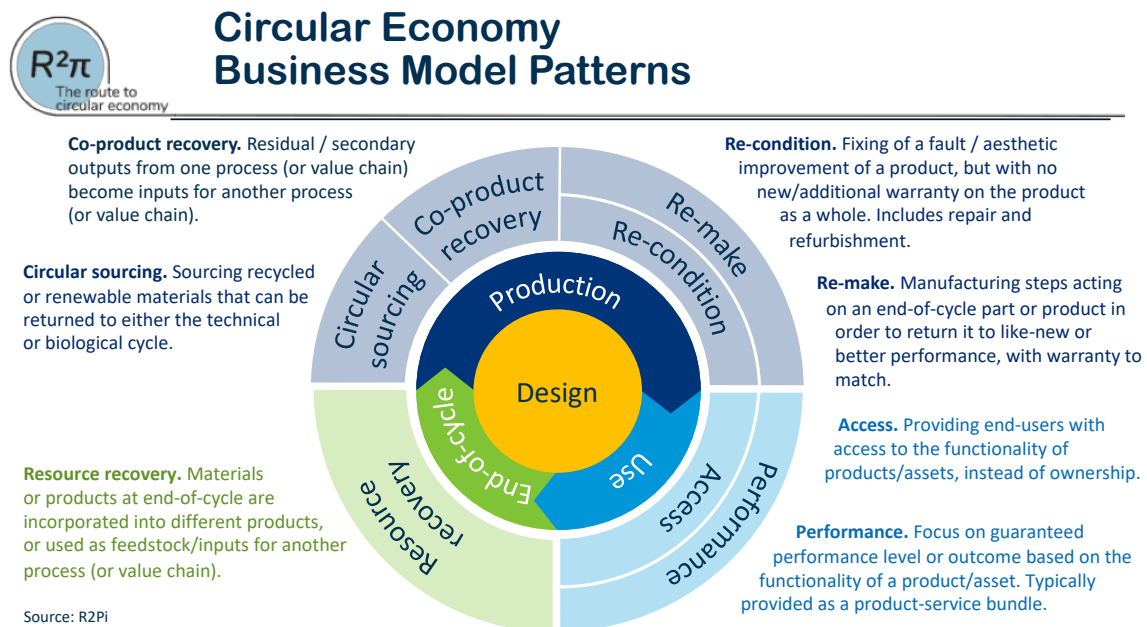
the other options would be tested in turn. This is one of the reasons it is important to establish 3-5 different value propositions and business models. It will be necessary to pivot between these two stages until a good business model fit (successful validation) is found. There are several tools to develop new models and review the options.

The design criteria captured will likely first come from the vision formulated in the team. Some of the elements in that vision are so important that they are non-negotiable. Other important criteria for designing the new business model will also come from the SWOT analysis previously discussed, and some elements will be more important than other. These could be considered in a more formalised method such as categorising each criterion under “must,” “should,” “could,” or “won’t” to help prioritise them. In this case, there was not a separate discussion and formalised prioritisation on the design criteria, but rather some key elements were considered when innovating the new circular business model ideas. Results at this stage help to understand the potential circular business models and inspiration for new value propositions and the improved future state.

### Inspiration

Generally, the multidisciplinary team at Bridgestone was familiar with circular economy and its concepts, and therefore, no major explanations or training elements were necessary to prepare them for innovating in the direction of circularity. So, at this point, there was only a short input from the R2π team to provide some inspiring examples from other companies with circular business models based on the various patterns (as shown in the Figure below).

FIGURE 17: CIRCULAR ECONOMY BUSINESS MODEL PATTERNS



Source: R2π Project<sup>39</sup>

<sup>39</sup> <http://www.r2piproject.eu/wp-content/uploads/2019/08/10.-CEBM-Patterns.pdf>



### 2.3.1 Create new value

The value proposition is one of the most fundamental building blocks of a business model, and it is also one of the most complex ones. The overall success of a new business model is contingent upon the value that it creates for customers, and by designing a sound and relevant value proposition, a business is able to create, test and deliver precisely what customers want. A direct result of the well-designed value proposition is reflected in the profitability of the business model. Simply, the more directly and effectively a value proposition addresses customers' most pressing issues, wants, and desires, the more likely it is to be a profitable and long-lasting model.

Naturally, this was a key topic discussed among the participants in the workshop. Each group tried to understand value from the customers perspective and discussed questions such as: What are the customers "jobs-to-be-done"? What "pains" are they having that need to be addressed? What "gains" are they seeking where we can help them? This can be done using another tool such as the value proposition canvas or, as in this case, can be held as an open dialogue around the key questions. Naturally, customers in this sector value such things as comfort, safety and low noise levels (of tyres), but the participants were also trying to innovate beyond existing products, so it was important to explore many possibilities and ideas that could inspire a more circular business model even in greatly different product areas. The three groups explored several areas of application in order to combine the properties of secondary rubber with the value that customers need in non-tyre applications. That provided the basis for further developing these ideas into draft business models.

### 2.3.2 Create new business models

After having discussed customer needs (pains, gains, job-to-be-done) and ideas for meeting these in new and different ways, the participants continued working with the business model canvas and completing the other blocks. The three different groups created different business model options to explore and developed ways to ensure the sustainability and circularity of the new models. The figure below shows an example from one of the group discussions.

*FIGURE 18: EXAMPLE OF WORKSHOP CIRCULAR BUSINESS MODELS DISCUSSION*



**Source:** Bridgestone and R2 $\pi$  Workshop (blurred due to confidentiality)

The process worked well as did the use of the canvas as a tool to guide discussions and keep the focus on relevant areas. Participants provided positive feedback and were even surprised at their own abilities to generate not just new ideas but entire business model concepts. They mentioned how suitable the canvas was to fostering dialogue as well as how valuable it will be to them when it comes time to explain to the decision makers their ideas and to seek approval for further work.

## 2.4 Validate

Thus far, all of the innovations of the circular business model ideas have come in the form of assumptions or hypotheses. Now, it is necessary to begin testing and validating these as efficiently and effectively as possible in order to verify the viability of the business model. Only by testing these hypotheses and validating or invalidating them, can there be progress towards an implementable model. The aim of early innovation is to maximise the learning per amount of time and money spent. It is important to find the right starting points for testing, and therefore, identifying the assumptions is key.

### 2.4.1 Generate Assumptions

Before starting to test and prioritise the core hypothesis, it is vital to generate key assumptions about the new business models. The Live Matrix is used to categorise these assumptions and identify the most important ones for further investigation. It is helpful to decide whether assumptions are based on: reliable fact, educated views, or wild guesses, as well as to decide whether the result of these assumptions being true or false would have a severe, moderate or minor effect on the success of the business model. The matrix helps to quickly categorise the assumptions and then to help identify key next steps towards validating or invalidating the model. The most significant assumptions must be investigated or tested in order, in the best case, to verify the viability of the model, or to point to improvements that can be made, or, in the worst case, to invalidate the model completely and force the team to explore another business model option.

In the workshop, the participants identified several critical assumptions for the circular business model ideas (see the figure below for an example). It became immediately clear that further investigations must be done in order to test whether their ideas were valid or not. Some of the assumptions were technical in nature and raised questions that would require conducting research. The discussion moved quickly towards what that would mean in their internal processes: defining a new research project, writing a plan including steps and resources needed, and seeking approval from the appropriate level of management.



FIGURE 19: EXAMPLE OF WORKSHOP ASSUMPTIONS DISCUSSION



Source: Bridgestone and R2π Workshop (blurred due to confidentiality)

## 2.5 Deliver

In order to begin the planning of next steps and to start creating a roadmap, the vision canvas that was previously created was revisited and the discussion then revolved around defining some key bold steps to help reach that vision with the circular business model. The main vision defined in the workshop was to implement a scalable open loop business model by 2020, and each of the innovated business models had different approaches to doing that, and therefore the teams identified different bold steps that would be necessary to achieve the vision. An example is shown in the figure below.

FIGURE 20: EXAMPLE OF WORKSHOP BOLD STEPS DISCUSSION



Source: Bridgestone and R2π Workshop (blurred due to confidentiality)

Here, it is important that teams think broadly and boldly about what must be done to achieve the vision, yet also, that they define steps concretely enough that they can be operationalised. Some examples of operational bold steps might be: conduct market research to verify customer interest in this new product or service; execute a technical feasibility study on certain new aspects; establish key partnership to execute a specialised part of the production process; design the logistics chain and partners for managing the secondary materials.

### 2.5.1 Implementation Roadmap

The roadmap provides a simple layout to set out activities, responsibilities and deadlines over a period of months to detail the bold steps and help reach the circular vision. It can, for example, include all of the detailed actions needed to reach the first bold step. Or, it may include multiple sets of actions for different teams to work towards multiple bold steps simultaneously. The outputs of this tool are clear tasks and deadlines allocated to the right team members. During the workshop, participants provided input to develop roadmaps for their business models. An example is shown in the figure below.

FIGURE 21: EXAMPLE OF WORKSHOP ROADMAP DISCUSSION



**Source:** Bridgestone and R2π Workshop (blurred due to confidentiality)

## 2.6 Evaluate

The evaluation stage is about assessing the readiness of the newly created circular business model as well as the readiness of the organisation to begin implementation. Before substantial time and money are invested, it should be verified that the critical assumptions have been tested, the key steps are well planned and the right people are on board. There are tools available to support this, such as the Transition

Readiness Self-Assessment of Circular Business Model Innovation Toolkit (R2 $\pi$  Deliverable 5.1.). The tool is not presented here, since the Bridgestone case has not yet reached this stage.

The following final chapter will present conclusions and recommendations.



Source: Bridgestone and R2 $\pi$  Workshop.





## 3 Conclusion and Recommendations

The R2 $\pi$  facilitation of the process came to an end, but the circular business model innovation journey of Bridgestone is gaining speed. During this innovation process, facilitated design thinking methods and tools were used to identify opportunities for Bridgestone to further innovate circular business models that increase business value while simultaneously reducing negative impacts on the environment. Throughout the innovation journey, business opportunities were identified and explored, seeking to develop a roadmap that can transform these ideas into practical activities, products and services for the company to become even more circular.

The feedback from Bridgestone was very positive, and the workshop and exercises developed were said to be highly valuable for re-imagining the future of the business and operations, and for defining concrete actions. Specifically, a circular business model from the workshop was chosen for further development, and the necessary next steps and investments were included in a business case presentation to Bridgestone management. The decision was made to create a follow-up project to explore more concretely the value proposition of a new business case based on a circular economy model. The necessary resources were approved in order to test the assumptions identified and to investigate how this circular business model can be achieved (e.g. investigating technologies and seeking potential partners).

### 3.1 Reflections on barriers and enablers to the innovation journey

Several factors are important to initiating and sustaining a circular business model innovation journey, and achieving positive outcomes. It is useful to examine some of the key factors (which can be barriers and/or enablers) relevant to Bridgestone's case, as these provide guidance to the company as well as to policy makers which we outline below.

**Company culture.** A core element of Bridgestone's company philosophy is "serving society". This provided a higher goal which circular economy thinking is compatible with, as it addresses social and environmental benefits, as well as economic ones. A company culture that promotes excellence along multiple dimensions – commercial, social, and environmental – provides a basis for people to question the status quo and challenge themselves and the organisation to do better.

**Clarity of ambition.** To create action, it is important that culture and intentions are translated into a clear ambition. Bridgestone's ambition to achieve circularity served as a focal point around which teams could engage and generate ideas. Furthermore, the bolder the ambition, the more people tend to stretch themselves and explore innovative options that can create future solutions.

**Investing time and resources for internal collaboration.** Taking time out of busy schedules is a significant challenge for company staff and managers. Nevertheless, the Bridgestone team demonstrated a strong willingness to invest staff time and prioritise the effort required, bringing over 15 colleagues together for the engagement. This level of commitment is very much required to generate tangible outcomes and initial momentum. However, to maintain this, an ongoing structured programme of effort as well as buy-in and commitment from senior staff is required to provide colleagues with the time to continue investing in the initiative.

**Senior-level sponsorship.** By their very nature, circular business model initiatives have the ambition to be transformational for an organisation. This therefore requires senior-level sponsorship to not only release



the necessary resources, but also to give permission and support to explore solutions that are not part of 'business as usual'. Senior sponsorship also helps to raise the level of ambition, as knowing that senior management is engaged inspires people and makes them feel that their ideas will be considered seriously.

**Cross-functional collaboration.** Bridgestone brought together a cross-functional team of colleagues from different parts of the business, including: sustainability, product development, financial, etc. This enabled a rich set of ideas to be explored from a number of perspectives during the innovation process. Circular business model innovation is best done by bringing cross-functional teams together to jointly develop ideas and solutions.

**Expertise in circular economy.** Circular economy principles provide a lens by which companies can look at their business model in new ways. This requires people to have a grasp of key concepts, as well as to understand how they can be applied. A combination of basic theory as well as real life case studies and applications are very useful reference points to help bring teams up to speed and generate new ideas for the business. Access to this expertise can be a key challenge and barrier for companies undertaking a circular business model innovation journey. The R2π team provided this content as part of the facilitation process, for example during the initial presentation of circular business model concepts as well as reference examples to support new business model idea generation.

**Experience in business model innovation processes and tools.** Circular business model innovation is not generally a process which company staff have experience in executing. It combines expertise in facilitation, business acumen, and change leadership. It is therefore beneficial for companies to either train staff in tools and techniques (and enable them to maintain skills by regularly applying them), or to seek external expertise. The latter is often a logical choice when initiating an innovation process when staff do not have the experience. A skilled external facilitator, working closely with project sponsors to co-design the process can enable a powerful start to the journey. Over time, staff can skill-up on the concepts and in-house facilitation expertise can be developed. Bridgestone benefited from the R2π team bringing this skillset and experience to the process and recognised the positive impact it had. While large organisations have the resources to buy external support, this can be a significant barrier for smaller companies who cannot afford to hire this expertise. Nevertheless, the Circular Business Model Innovation Toolkit (Deliverable 5.1) and Circular Economy Transition Guidelines (Deliverable 7.2) provide a degree of 'self help' for all types of organisations.

## 3.2 Recommendations to Bridgestone

Our recommendation to Bridgestone is to continue with the innovation process, especially collaborating with their motivated team, to fill in the knowledge gaps, test the assumptions, pilot the circular business model and iterate improvements based on these lessons learned until they are able to go to market with a viable circular business model.

As discussed in Section **Error! Reference source not found.** (Business Overview), multiple parties play a role in the tyre value chain, including the management of end-of-life tyres (ELT). For Bridgestone to achieve its circular vision, it will need to collaborate even more with value chain partners at a system level, as well as potentially creating new partnerships. This will require developing a vision that appeals to other value chain parties, including creating and sharing new areas of value so that each can see their business case for transitioning towards a new model. The tools and methods used by Bridgestone, and the broader



tools described in the Circular Business Model Innovation Toolkit (R2π Deliverable 5.1.), can also be used to enable system-level change.

The same factors and issues described above under barriers and enablers will also occur when involving multiple parties. For example, a multi-organisation/stakeholder programme will require:

- Developing a common vision;
- Senior support from within partner organisations; and
- Sustained commitment and investment to a joint effort.

Bridgestone will therefore need to invest in this collaboration to continuously engage and align vision and commitment with willing partners. External facilitation may also be desirable to support this process if it provides skills and resources that are not immediately available within the organisation.

### 3.3 Recommendations to Policymakers

These recommendations represent the independent opinions of the R2π team and not necessarily the views of the case companies involved. This case study illustrates the initial stages of a business model innovation process undertaken by a company. As discussed above, a number of internal factors can act as enablers or barriers to this process. Externally, companies need to engage with partners within their value chain for a system-level change to be achieved.

With respect to internal factors, the ability to draw on external expertise and facilitation is a key enabler. This case study demonstrates that facilitation of the circular business model innovation process is highly valuable for an organisation. Furthermore, there has been strong feedback from collaborators across case studies and in various stakeholder dialogues that facilitation by outside experts is highly valued and that a process and toolkit alone are not enough to help them accelerate the transition to circular business models. If this is valued by a large corporate, it would be even more so by smaller and less well-resourced organisations who are not be able to effectively find or afford external expertise. A policy-level action should therefore explore how companies, especially small and medium-sized enterprises (SME), can be supported through innovation programmes, training and subsidised business services. Some programmes already exist, such as the European Regional Development Fund<sup>40</sup> Circular Business Model Business Service programme provided by Zero Waste Scotland<sup>41</sup>. These types of programmes have the benefit of both stimulating the supply of expertise in the market, as well as providing an affordable or free resource for companies looking to explore circular economy business models.

From an external perspective, policy action should look at reducing barriers to collaboration between parties within and between sectors or value chains. For example, anecdotal feedback across case studies highlights real or perceived barriers to collaboration due to competition policy. Providing clarity to business and aligning competition policy to the needs for collaboration at a business model level is something to be considered. Examples exist within industries of pre-competitive collaboration in areas of technical innovation that benefit all players. For example, developing a breakthrough new material that is more recyclable. However, business model innovation requires companies to examine areas that can touch on market influence and access, sometimes requiring close collaboration and open dialogue on

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<sup>40</sup> [https://ec.europa.eu/regional\\_policy/en/funding/erdf/](https://ec.europa.eu/regional_policy/en/funding/erdf/)

<sup>41</sup> <https://www.zerowastescotland.org.uk>



common business objectives and value sharing. Governments and EU-level policy should therefore look at how to enable this in positive ways.

