



## DRIVERS AND BARRIERS WORKSHEET

### 1. EXTERNAL DRIVERS

<b>Coercive pressure</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Legal pressure to decrease the use of certain material resources in society (e.g. chemicals)			
Tighter environmental policy standards, especially on waste prevention, recycling and recovery targets			
Taxes on natural resources that promote resource efficiency and/or substitution of resources			
<b>Market pressure</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Increasing competition from low-cost countries puts European tourism providers under pressure to find new business propositions and alternative ways to organise business			
Consumer preferences in some product groups are shifting away from ownership towards increased acceptance of renting, sharing and leasing business models			
Demands for new business models from business partners and customers			
Risky/uncertain access to virgin raw materials, price volatility.			

## 2. INTERNAL DRIVERS

Economic drivers	No relevance	Medium relevance	High relevance
Cost savings in waste management by reusing and recycling waste			
Revenue growth from recovering wasted economic potential of products and finding alternative sources of value, e.g. from resale of used products or parts harvesting and using in refurbishing and remanufacturing processes			
Potential to meet low cost competition by creating market differentiation by adding or creating new services close to final customers			
New possibilities for innovation and growth from alternative business models that offer access to products over ownership or sell performance			
Cost recovery by selling valuable second hand, repaired, refurbished, remanufactured, upcycled products and recyclable materials			

<b>Environmental benefits</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Reduced risk/liability of hazardous materials			
Reduced waste volumes due to reuse of products, parts and materials			
Greater security of supply and resilience			
Greater security of resource supply is an important driver since the future material demand is difficult to predict.			
Security of supply increases resilience of the business system, which is then better equipped to deal with change and withstand economic and financial shock and disturbances			
Reduced price volatility of resources			
<b>New and enhanced customer relationships</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Diversified and customised offering not only attract new customers, but also strengthen existing customer relationships and increase brand loyalty			
Improved customer interaction and loyalty			
Company values, strategies and aspirations			
Opportunity to capitalise on and benefit from higher quality and environmentally sound products and services			
Increased brand protection and loyalty			
Top management commitment			

### 3. EXTERNAL BARRIERS

Coercive barriers	No relevance	Medium relevance	High relevance
Polices that incentivise recycling, incineration, or disposal over other circular strategies such as reuse and refurbishment			
Regulatory frameworks that target export of waste streams (aimed at reducing the amount of waste sent to developing nations) may also hinder circular business models by preventing cross-border movement of products for reuse			
Difficulty, high cost and long time to gain 'secondary material' status over 'waste' status under the existing environmental permit system.			
Absence of defined targets for resource efficiency in policy			
Lack of governmental incentives (e.g. financial) for resource efficiency			
Legacy product liabilities			
Market barriers	No relevance	Medium relevance	High relevance
Products have low residual value at the end of life			
Low price of many virgin materials is a barrier, especially when the costs of recycled materials are higher			
Current infrastructure does not support circular offerings, i.e. locked-in infrastructure			
Lack of networks and/or supply chains for disassembled products and components and recycled materials (reverse logistics)			
High labour costs			

Lack of design tools for circular business models and for circular products			
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#### 4. INTERNAL BARRIERS

<b>Business models related barriers</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Decreased sales of new products due to increased sales of repaired, reconditioned and remanufactured products			
Lack of supply (or quality) of returned products or resources (			
Difficult to organise takeback logistics			
Uncertainties about the residual value of the new products, i.e. repaired, reused, upcycled, refurbished or remanufactured			
Unpredictability of volume of returned products can make it difficult for companies to plan and financially forecast			
Risks with product performance, increased liabilities for reconditioned products or materials			
<b>Value chain related barriers</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Existing supply chain dependencies and relationships prevent circularity			
Difficult to cooperate/collaborate with other companies and/or stakeholders			
More risks from being dependent on market-unstable suppliers compared to being dependent on traditional global commodity markets for virgin materials			
<b>Financial barriers</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>

Liquidity risks as cash flows spread over longer periods of time			
High upfront investment costs associated with products with longer lifetimes			
Increased (working) capital needs for pre- financing in the case of leasing models and relatively lower returns on investments in these models			
Potential increase of cost of capital as assets are retained on the companies' balance sheets creating a financing demand and thus decrease overall liquidity of the company's asset			
Risk of not achieving cost-effective repair, reuse, or remanufacturing			
High costs associated with takeback of products			
High labour costs related to product disassembly and source separation of waste			
<b>Customer related barriers</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Lack of consumer awareness about offerings or misunderstandings about refurbishment, reuse, servicing, performance sales, etc.			
Lack of and/or uncertainty about consumer acceptance and/or demand for circular offers/products about product or service acceptance			
Pre-conceived notions that refurbished products are inferior to new products or lack in their thrill of 'newness'			
<b>Organisational strategies and capabilities</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Circular business does not align strategically within organisation			
Diversification of product-oriented businesses with service-focused			

offerings and lack of expertise in the company			
Lack of expertise within organisation and increased demand for company resources			
<b>Technical issues</b>	<b>No relevance</b>	<b>Medium relevance</b>	<b>High relevance</b>
Products are not designed for circular business models, i.e. for easy disassembly, repair, refurbishment and remanufacturing and thus physical product attributes make it difficult to reuse products			
Concerns about technical reusability of materials or lower material quality after reuse.			
Hygienic/safety issues associated with reused or repaired products			
Lack of spare parts, repair tools, repair guidelines.			