Teaching Case Study

Taking Back the Future – Take-Back Program

CARE for a Chair

Proposal Sheet

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Content

Abbreviations

TCS	Teaching Case Study

1 General Information

Activity Sector	Product development, logistics, service development		
Keywords	Take-Back program; Life Cycle Assessment (LCA); Circular Economy (CE); Impact assessment		
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Public	Initial and alternative education ☐ Beginners ☒ Intermediaries ☐ Experts	Continuing education ☐ Beginners ☒ Intermediaries ☐ Experts	
Domain(s)	☒ CSR ☐ Economics ☒ Entrepreneurship ☐ Finance ☐ HRM ☐ Information Systems ☐ Law ☐ Marketing ☐ Political Sciences ☒ Strategy ☒ Supply chain & logistics	☒ Arts, Architecture, Design, Ergonomics ☐ Education Sciences ☐ Geography & Urban Planning ☒ Information & Communication Sciences ☐ Literature & Language Sciences ☐ Medical Sciences ☐ Physical Activities & Sport Sciences ☐ Psychology, Sociology, Philosophy, Demography	☐ Biology & Neurosciences ☐ Chemistry, Biochemistry ☐ Earth & Universe Sciences ☐ Electrical, Electronics ☐ Energetics ☐ Mathematics & Computer Science ☐ Mechanical Engineering ☐ Physics ☒ Processes
UN SDG	☒ 9 Industry, Innovation, and Infrastructure ☒ 12 Responsible consumption and production ☒ 13 Climate Action		
Place in the Circular Economy Model	☐ Raw materials ☒ Sustainable design ☐ Production ☒ Distribution ☒ Consumption Reuse Repair ☒ Collection ☒ Waste management ☐ Residual waste		

2 Abstract

CARE, a Danish company specialising in ergonomic chairs and equipment for individuals with disabilities and the healthcare sector, is exploring sustainability initiatives

During a recent strategy meeting, the Chief Sustainability Officer (CSO) proposed a take-back program for one of the company's chairs to enhance environmental sustainability and circular economy efforts. A new cross-disciplinary project team within the Department of Sustainability has been formed to address this challenge

The students are part of this newly formed Sustainability Department Project Team. A specific chair has been chosen as a pilot for the team (students). The task is structured into three key steps:

1. Analysis of current context: Analyse the current logistics setup of the chair and propose suggestions for closing the loop to ensure the chairs are returned to the company.
2. Evaluate environmental impact: Analyse and evaluate the environmental impact of the proposed solution. This includes conducting an LCA (Life Cycle Assessment) focusing exclusively on CO2e emissions.
3. Process Development: Summarise the insights and experiences gained into a generic framework for implementing take-back programs for CARE's products and addressing environmental sustainability and circularity within the context of CARE.

This initiative aims to integrate sustainability into CARE's business model, ensuring technical feasibility and economic viability while maintaining product quality and performance.

3 Pedagogic goals & prerequisites

Considering the product and service development perspective, the overall learning objectives within environmental sustainability for the case are as follows.

The students will be able to:

- Understand how a product's life span can be extended and how this can affect a product's environmental impact and circularity.
- Analyse a product's logistics setup
- Conduct a Life Cycle Assessment (LCA) to analyse a product's environmental impact.
- Develop a Take-Back proposal focusing on minimising environmental impact and improving circularity.

Moreover, the case supports a broader range of learning opportunities across fields such as product development, supply chain logistics, communication and business processes. However, these learning potentials and objectives embedded in the case are not formally described here. Hence, it is up to educators to take advantage of these opportunities.

4 Sustainability Goals

This TCS focuses on two key aspects of environmental sustainability: *environmental impact* and *circularity*, emphasising how these factors can be influenced by developing a product take-back program during the product development phase.

For environmental impact, the focus is on conducting a (simplified) life cycle assessment (LCA), specifically measuring CO2e emissions.

For circularity, the emphasis is on implementing a take-back program to enhance the products and components' lifetime, drawing from the principles of the Circular Economy (CE) concept.

5 Case Description

Year of the problematic	2025	
Duration for students	Preparation: 2 hours Implementation: 4 days	
Languages	☒English	☐ Other: ……
Use case	☒ In class	☒ Examination TCS
Category	☐ C1: Case written in collaboration with a company which has given its consent for using its internal sources such as the company name, figures, photos, videos, and so on. Join the agreement sheet. ☐ C2: Case based on real company information and with the acceptance of the company to use its data, but names or figures (of company and persons) are modified to keep them confidential. Join the agreement sheet. ☐ C3: Case written using external public sources (annual report, websites, brochures, newspapers, …) where names or verbatims of the protagonists are used. Join the agreement sheet. ☐ C4: Case based on real company using public information without the agreement of the company (generally, the names (company and persons) are changed to anonymous ones. Impossibility to make the link between the TCS and the company. ☒ C5: Imaginary case based on teacher's experience who collected information from several companies in order to write a case study with a fictive integrative company. It can also be a compilation of different situations of several periods put together at the same time to form a pedagogic tool.	
Number of pages: Statement / Annex		6 / 20
Number of pages: Teachers' notes:		14
Diffusion licence		See cover page

6 Case Pack Components

6.1 General Documentation

Table 6.1: General TCS documents

Document name	Description	File name	# pages
Proposal Sheet	Teaching Case Study Description. This file can be published to inform potentially interested persons about the Teaching Case Study (this file).	SCABEE TCS Design for Take Back (2025) - Proposal Sheet.pdf	8

6.2 Student's Documentation

Table 6.2: Documents for students (to be shared when TCS is applied)

Document name	Description	File name	# pages
Case scenario	The document for students includes the mission and all necessary information.	SCABEE TCS Design for Take Back (2025) - Base Scenario.pdf	29
Journey Map Template	This document is a template students can use when working with the case study.	SCABEE TCS Design for Take Back (2025) - Annexe H - Journey Map Template.docx	3

6.3 Teacher's documentations

Table 6.3: Documents for teachers (not to be shared with students)

Document name	Description	File name	# pages
Teacher's note	The document is for teachers to guide the students through the Teaching Case Study.	SCABEE TCS Design for Take Back (2025) - Teacher's Note.pdf	14
Teacher's Note: Journey Map with Examples	This is a journey map with examples for each phase and step that teachers can use to guide students through the TCS.	SCABEE TCS Design for Take Back (2025) - Teacher's Notes Journey Map Examples.pdf	3