

Mapping the Storm

Designing a Climate Resilience Dashboard for a Regional Community

Proposal Sheet

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Abbreviations

QH	Quadruple Helix
SDG	Sustainable Development Goal (United Nations)
SME	Small and Medium-sized Enterprise
TCS	Teaching Case Study
UX/UI	User Experience / User Interface

1 General information

Activity Sector	Public Administration / Digital Innovation / Climate & Environment		
Key words	Climate resilience, dashboard design, stakeholder management, Quadruple Helix, digital public services, co-creation, user needs, modular design		
Author(s) / Institution / Country	 Martin Dobler, FH Vorarlberg (Austria)  Adam Rovensky, FH Vorarlberg (Austria)		
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	☒ SDG 11 Sustainable Cities and Communities ☒ SDG 13 Climate Action ☒ SDG 17 Partnerships for the Goals		
Place in the Circular Economy Model	☐ Raw materials ☐ Distribution ☐ Collection	☒ Sustainable design ☐ Consumption Reuse Repair ☐ Waste management	☒ Production ☐ Residual waste 

2 Abstract

As climate change intensifies, European municipalities face growing pressure to develop data-driven strategies for climate resilience. Digital dashboards have emerged as a promising tool to make climate information accessible and actionable for diverse stakeholders - from emergency managers and urban planners to schools and citizens. Yet building such dashboards requires more than technical expertise: it demands a structured approach to stakeholder assessment, participatory design, and use case definition.

This Teaching Case Study places students in the role of consultants supporting a fictional Central European city - Waldbach - in designing a Climate Resilience Dashboard. Working through a realistic scenario inspired by real-world projects in Austria and Central Europe, students apply the Quadruple Helix framework to map a complex public-private stakeholder ecosystem, identify user needs, define use cases, and propose a modular dashboard architecture. The case highlights the governance and collaboration challenges inherent in multi-stakeholder digital public services, and challenges students to think beyond technical solutions towards participatory, community-centred design.

3 Pedagogic goals & prerequisites

Learning Objectives

Students will:

- Apply the Quadruple Helix framework to map a multi-stakeholder ecosystem in a real-world context
- Conduct a structured stakeholder assessment, including identification of roles, needs, and potential conflicts
- Develop a participation matrix showing data producers, consumers, and governance actors
- Define use cases that translate stakeholder needs into concrete dashboard requirements
- Propose a modular digital solution architecture adapted to heterogeneous user groups
- Reflect on the governance and collaboration challenges of public-private digital services

Prerequisites

- Students should have basic familiarity with:
- Stakeholder management and analysis methods
- Digital product or service development concepts
- Sustainability frameworks (SDGs, climate change basics)
- UX/UI or human-centred design principles (beneficial but not required)

4 Sustainability goals

This case directly addresses SDG 13 (Climate Action) by exploring how digital tools can enhance a community's capacity to monitor, understand, and respond to climate-related risks. It engages with SDG 11 (Sustainable Cities and Communities) by focusing on the governance and participatory design dimensions of urban climate resilience. SDG 17 (Partnerships for the Goals) is addressed through the emphasis on multi-stakeholder collaboration between public institutions, private sector actors, academia, and civil society.

The case encourages students to see climate resilience not merely as a technical or regulatory challenge, but as a social and institutional one - requiring inclusive co-design, data transparency, and shared accountability. It challenges the assumption that better technology alone can solve governance problems, and asks students to grapple with the real barriers to cross-sector collaboration in public digital services.

5 Case description

Year of the problematic	2026	
Duration for students	Preparation: 2-4 hours Implementation: 6-8 hours	
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 of 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 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	5 / 11	
Number of pages: Teachers' note:	18	
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 Mapping the Storm (2026) – Proposal Sheet.docx	7

6.2 Student's documentation

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

Document name	Description	File name	# pages
Case scenario	The document for students including the mission and all necessary information.	SCABEE TCS Mapping the Storm (2026) – Base Scenario.docx	11

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 for teachers to guide them through the Teaching Case Study.	SCABEE TCS Mapping the Storm (2026) – Teaching Note.docx	10