Designing a mobile web portal Odgovoren.si – the backgrounds

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Abstract

The research report delves into the information portal odgovoren.si design process. It focuses on the backgrounds, the initiators and design framework, and the processes.

Additionally, to the background analysis on social responsibility (SR), the project governance and adaptive combination of CyberSystemic methodologies, such as Mind mapping, Participative approach and project-based team Syntegrity, we examine the design process development and its preferred outcomes for the participants.

The results are interesting. On the first level, we elaborate on the need for systemic support (additionally to the conceptual frame and stakeholder preparedness) when engaging with sustainability-focused projects. During the project, we can elaborate on the need to reduce the control structures to the level required for communication, and in the last part, on the development of tacit knowledge by the project members.

The implications are twofold: the team members received enough insights to develop their individual path of sustainable development. The portal documentation is ready for development. It can be applied with the support of the system, the know-how of the organisation and the energy of the development team.

Keywords: Social Responsibility, odgovoren.si, CyberSystemics, Mind mapping, Participative approach, team Syntegrity

1 Introduction

Defined broadly, SR encompasses the responsibility of individuals and organisations to contribute positively to society and to minimise harm to people and the environment (Aguinis & Glavas, 2012). Mulej et al. (2015) emphasise that genuine social responsibility requires systemic thinking—a holistic perspective recognising the interdependence of stakeholders, systems, and contexts. In Europe, the concept has gained significant traction, driven by regulatory frameworks like ESG reporting and societal expectations for sustainable development (European Commission, 2025).

Despite this progress, much of the research and practice surrounding SR remains focused on organisational policies, reporting standards, and outcome measures. As Bourdieu (1988) and Hyland (2004) argue, these approaches often overlook the lived experience of the actors involved that shapes the processes behind socially responsible initiatives.

Interactions—defined as dynamic exchanges of communication, negotiation, and coordination between systems or actors—are fundamental building blocks of systemic change (Pask & de Zeeuw, 1992). However, methods for systematically observing and analysing these interactions remain underdeveloped, especially in applied SR projects.

The Odgovoren.si initiative—a web portal designed to promote social responsibility and sustainability awareness in Slovenia—provides an excellent context to explore transdisciplinarity-related issues. As a collaborative project involving non-governmental organisations (NGOs), academic institutions, and broader societal actors, its success depends not only on technological design or content but on the quality and nature of the interactions among its participants. Understanding how these interactions unfold and how they are shaped by systemic structures and related interactions is crucial for replicating and scaling such initiatives.

This paper applies the interaction observation methodology (Perko, in press), grounded in CyberSystemics and systems thinking, to analyse the Odgovoren.si project as an interaction. By focusing not merely on outcomes but on the structures and related interactions that underlie collaborative engagement, this study aims to illuminate the often-hidden dynamics that enable or constrain socially responsible innovation.

The remainder of the paper is structured as follows. The next section provides a background on social responsibility and the theoretical foundations of interaction observation. Subsequently, we describe the methodology applied in this study, followed by detailed observations of the backgrounds of the Odgovoren.si project. We conclude by discussing the findings' implications for both theory and practice and by identifying avenues for further research in systemic observation of sustainability-oriented projects.

2 Backgrounds

2.1 Social responsibility

The concept of social responsibility has evolved significantly over the past century, expanding from philanthropic activities to encompass strategic, systemic engagement with societal and environmental issues. Early discussions often framed social responsibility as corporate charity or discretionary goodwill (Carroll, 1979). However, the focus shifted toward stakeholder

theory, emphasising the importance of organisations considering the interests of all parties affected by their activities, not merely shareholders (Freeman, 2010).

In parallel, European traditions of systems thinking have contributed to the understanding of social responsibility as an integral component of systemic viability and sustainable development. Mulej and Kajzer (1998) argue that social responsibility should not be viewed as an isolated ethical choice but as a necessary dimension of holistic systems thinking, requisite for addressing complex societal challenges.

Social responsibility is additionally viewed through strategic and institutional lenses. Aguinis and Glavas (2012) highlight the multi-level nature of corporate social responsibility (CSR), connecting individual, organisational, and societal factors, while Kramer and Porter (2011) introduced the notion of shared value, suggesting that businesses can achieve competitive advantage by addressing social issues. Additionally, research has increasingly integrated sustainability concerns, with environmental, social, and governance (ESG) criteria becoming central to both corporate strategy and regulatory frameworks (KRUEGER et al., 2024).

In Slovenia and the broader European context, social responsibility has moved from peripheral initiatives to a mainstream expectation, driven by regulatory developments, market forces, and evolving societal values (European Commission, 2025). True social responsibility requires systemic thinking and cooperative approaches that transcend organisational boundaries, aligning economic, social, and environmental objectives for sustainable progress (Knez-Riedl et al., 2006). This systemic view provides a crucial foundation for initiatives like Odgovoren.si, which seek to foster collaborative spaces for knowledge sharing and societal engagement in sustainability efforts.

2.2 CyberSystemics

The model to generate a requisitely holistic overview of a single interaction builds upon systems thinking (von Bertalanffy, 1950), cybernetics (Umpleby, 2016; Wiener, 1948) and second-order cybernetics (Foerster, 1995). The unified concepts are referred to as CyberSystemics (Reyes & Perko, 2024).

There were several attempts to address interactions as a general concept (Pask & de Zeeuw, 1992). The moment of interaction is significantly expressed and elaborated in the theatre. Thus, theatre interactions-related research (Scholte, 2018) serves as an inspiration for this work.

Only recently, a universal model of interactions, combined with the observation protocol, was proposed (Perko, in press), generating an option to collect interaction observation data in a standardised ontological form, which allows comparing related interactions and, more importantly, interactions from different environments.

To illustrate structures examined in an interaction, a modified Visible System Model (VSM) (Beer, 1984; Espejo, 2020; Espinosa, 2015) is utilised, interaction visualisation resides on System dynamics (Forrester, 1976).

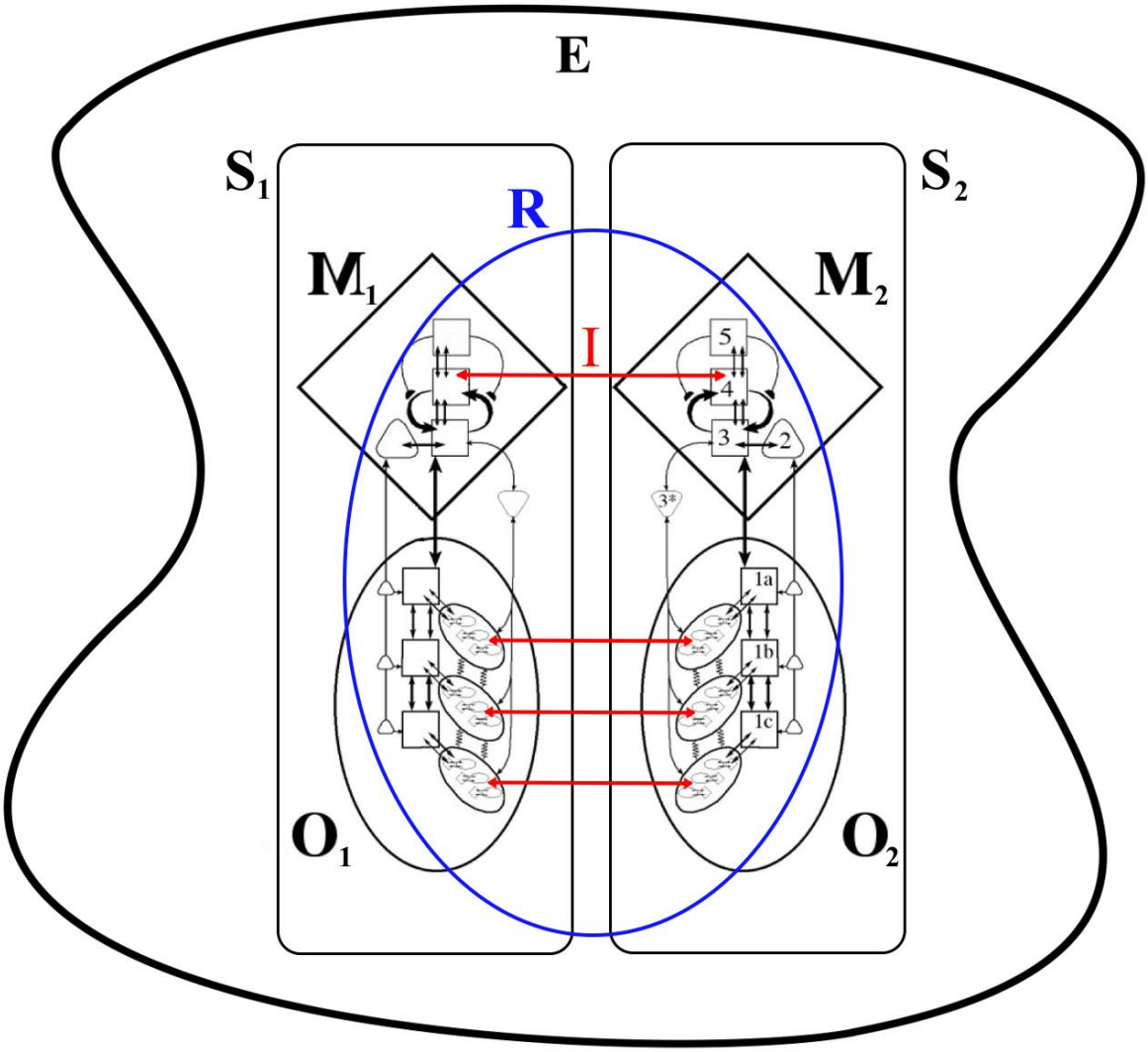
3 Methodology

Observing Interactions methodology is a novel methodology, focused on semi-structured observation of interactions, which invokes (Perko, in press) observations of structures and related interactions in time and space.

3.1 Structures

The modified VSM diagram, clearly identifying interactions between systems instead of vaguely commenting on the communication of a system with the environment, is used.

Figure 1: interaction structures



Adapted from (Beer, 1984)

As depicted in Figure 1, interactions are conducted between systems as long as a system invokes the capacity to receive, interpret, and send information.

Each interaction is dependent on and affects the structures as elaborated in Eqs (1) and (2).

(1) $f_1(E, S_1, S_2, R_{1,2}) \Rightarrow I$

(2) $f_2(I) \Rightarrow \Delta(E; S_1; S_2; R_{1,2})$

In Eqs (1) and (2), the interaction function parameters are elaborated as follows:

Environment (E) is a place where general structures for enabling interactions reside. Additionally, to provide structures for executing specific interactions, the environment provides structures for the existence of systems conducting the observed interaction.

The management subsystem of system 1 (M1) is the part of system 1 (S1), guides the mechanisms required to conduct the interaction.

Operational subsystem of system 1 (O1) is the part of system 1 that executes the mechanisms required to conduct the interaction. The management subsystem of system 2 (M2) is the part of system 2, it guides the mechanisms required to conduct the interaction. Operational subsystem of system 2 (O2) is the part of system 2 that executes the mechanisms required to conduct the interaction. Relations between systems 1 and 2 (R1, R2) are the structures developed specifically for conducting interaction between System 1 and System 2.

The function *f* is not clearly defined, but based on the complexity of the systems involved, it is a multidimensional function with multiple parameters in each dimensional vector. We presume different functions f in different interactions but are particularly interested in similarities in these functions.

In Eq. (2), the function f_2 of the interaction (I) affects (generates changes) in the structures listed above. The quality of understanding the interaction is related to understanding the complexity of functions f_1 and f_2, which, of course, are interrelated. Structures affect the execution of the interaction, while interactions redesign structures. Since this cycle is repetitively executed through time, a cyclical relation between structures and interactions can be observed, explained and thus governed.

3.2 Network of Interactions

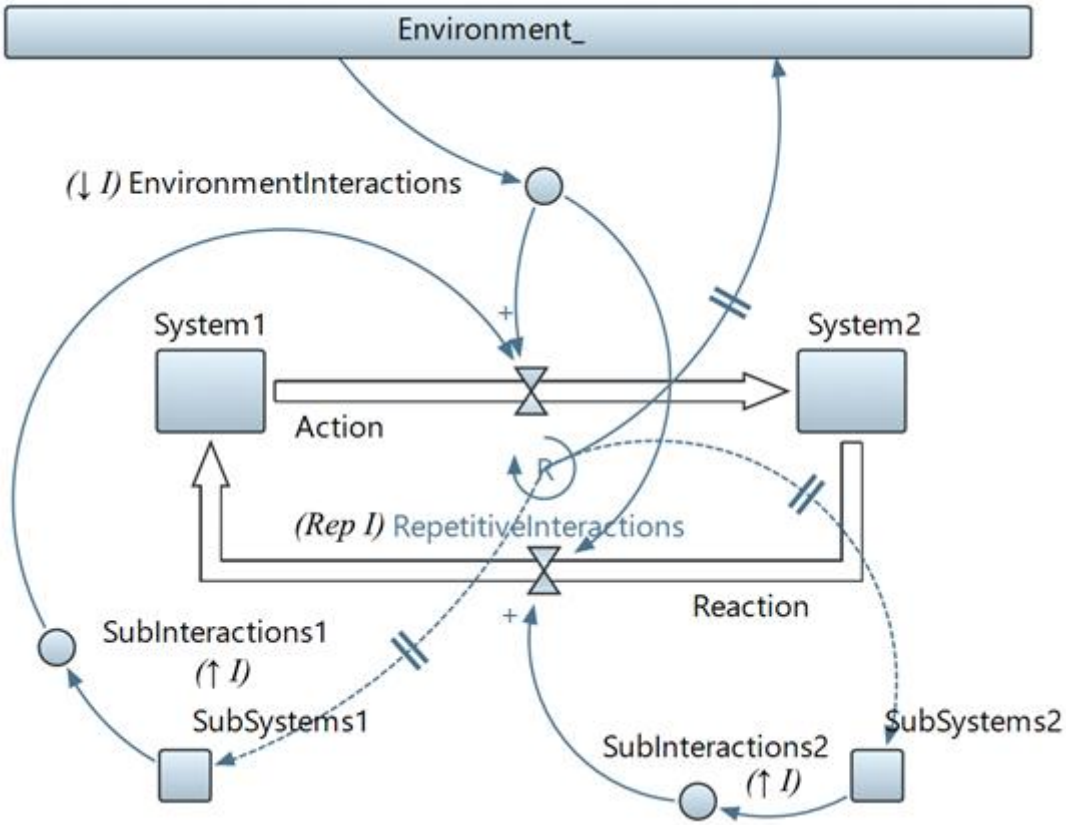
Interactions do not depend only on existing structures and frameworks. They relate to a whole network of interactions. Observing interactions is particularly useful if we cannot clearly understand the structures or, more importantly, if we would like to redesign the processes involved in generating high-level results. At the same time, observing, remembering and understanding interactions is much harder than simply analysing their results (structures); this is why our limited capacity to do so should be augmented with a tool providing these services.

In Figure 2, the cyclical and recursive network of interactions, based on systems dynamics concepts, is elaborated. In the inner cycle, the observed interaction consists of a two-step repeating cycle of action and reaction; in the longer run, the observed interaction is an interaction in a series of repeating interactions of the same kind and is affected by the results of the previous interactions and plans for future interactions. Like the model of the structures, some interactions are recursive, meaning that the environment interaction of one interaction is the focus interaction on a higher recursion level and a sub-interaction on an even higher recursion level.

$$(3)\quad f_3(Rep\ I, \uparrow I, \downarrow I, ?\,I;\ \rightarrow I, \leftarrow I) \Rightarrow I$$

$$(4)\quad f_4(I) \Rightarrow \Delta(Rep\ I; \uparrow I; \downarrow I; ?\,I; \leftarrow I; \rightarrow I)$$

Figure 2: Network of interactions



In Eqs (3) and (4), we can identify multiple interactions which are related to the observed interaction:

- Repetitive interactions (Rep *I*) of the same kind are executed in cycles, where the outcomes of previous interactions affect the execution of the follow-up interactions.
- Sub-Interactions (↑ *I*) are lower-level interactions which are executed as a part of the observed interaction.
- Environment interactions (↓ *I*) are higher-level interactions in which the observed interaction is a part.

Loosely related interactions (? *I*) do not have a hierarchical/recursive relation with the observed interaction but may directly or indirectly affect its execution. Each of these interaction types can be Supportive (→ *I*) or Constraining (← *I*) of the observed interaction.

Often repetitive interactions (Rep *I*), where the new interactions emerge autopoitetically from the previous interactions, are the major force in generating new interactions. This makes them an especially important part of the interaction development. Since autopoietic repetition invokes relatively few changes in structural support and control, it is at the same time energy efficient and risky for the future development of the systems involved.

An interaction is, therefore, additionally to the structures, affected by several other interactions. In contrast, the status of each of these can be observed by an array of parameters, expanding the multidimensional matrix of values. We can deduce that

interactions are affected by previous interactions and that they affect future interactions directly or indirectly through the structures.

By joining the structures and interactions, we tried to provide a set of perspectives in which the observed instance can be examined well enough to form a sharable representation in its environment. Generating a requisitely holistic perspective of the observed interaction can easily go beyond human capacity. Therefore, strong, intelligent information support is needed to generate more sophisticated interaction models.

3.3 Observations protocol

To define observation points, we can form an interaction-related two-dimensional space with the normalised dimensions of Zoom and Time.

- Zoom (*Z*) level ranges from 0 to 1 (0 means seeing the interaction from far away, providing a broad picture of its environment, while 1 examines the inner interaction details).
- Time (*t*), which flows from –1 to 1. Where –1 is the time of first planning the interaction, 0 is the time of the interaction execution, and 1 is the long-term interaction effects.

Normalising the plane of *Z*, *t* generalises the interactions observation framework and measurement process and thus enables observation data sharing.

For each of the observation points, the observers should agree upon which interaction properties can and should be observed and collected. Observation points can be used to collect data from the perspective of multiple interaction participants.

Defining the number and location of observation points should be part of a particular observation protocol; it may depend on the observer's goal and capacity to observe, the interaction, the interaction itself, and the capacity to share and reason upon the observation data.

In the observed interaction, we are examining the student project: designing odgovoren.si (responsible.yourself) information portal for sharing local news on social and natural responsibility on a national level. In the project, the design, the functional model, and the business model are to be developed.

Only one observation point is selected. The backgrounds, with the coordinates (*Z*: 0, *t*: –1), which means observation from far away, at the beginning of the interaction.

In the observation, the following structures and related interactions related in are invoked: E, M1, M2, $R_{1,2}$, Rep I, ↓ I, and ↑I

4 Results:

observation of a project proposal background

First, let us describe the observed interaction: The project is to design a portal to inform the public about social responsibility (SR) and sustainability.

The portal will serve as a point of contact for all stakeholders involved in social responsibility and sustainability.

On the odgovoren.si portal, the activities in Slovenia and abroad will be published for companies, organisations (public and non-profit), individuals, governments and everyone for

whom social responsibility and sustainability represent key personal and business values. We will promote awareness of this area, monitor research, present good practices and exchange knowledge and experience.

Technologically, the portal will contain the latest technologies that enable simple and verified publication of content, as well as transparent search.

4.1 Environment (E)

Several structures related to social responsibility, supporting the project interaction, are established:

The concepts of Social responsibility: the concept originates from the mid-to-late 1800 (Writer, 2023); by some authors (Knott & Wilson, 2024) it is related to charity, by other perspectives, it is considered to be an operational instance of systems thinking (Knez-Riedl et al., 2006); it is strongly related to the concept of sustainability, well developed in the European Union and developed countries (Aguinis & Glavas, 2012).

- **The public acceptance of social responsibility**: 20 years ago, social responsibility concepts were marginal, and volunteer activities of individuals and organisations (Fisher, 2004), the task was introducing the concepts to society. With the current governance, the social responsibility concepts are part of the successful organisations and are generally accepted in society (Abbas, 2025).
- **The formal framework** of the environment structures which actively frame and support social responsibility.
    - **Regulations**: the environmental, social and governance (ESG) principles are binding for the large organisations through the ESG reporting (Krueger et al., 2024).
    - **Support**: for the social responsibility concepts, embedded on the organisational and personal level, it requires support for sharing the concepts, and developing the capabilities to as responsible (Perko et al., 2024). The EU is providing several initiatives to share the concept (European Commission, 2025).

4.2 System 1 Management (M1)

IRDO – System 1, has been active in the field of social responsibility for the last 20 years. IRDO is a small NGO, focused on developing social responsibility concepts and sharing them with organisations and individuals. The management invokes several aspects related to the observed interaction.

The capacity to drive social responsibility: IRDO is a small organisation. Still, over the years, it developed the capacity to address social responsibility-related issues, and it also incorporated the publishing capacity. IRDO capacity is, nevertheless, limited by the number of employees.

Being on the ball with the topics: Due to continual interactions with organisations and individuals focused on SR, learning, developing frameworks, contributing to events, IRDO is familiar with the state of the art in SR by the policy makers, regulators, large and small companies.

The Idea and the conceptual of Odgovoren.si: The information portal odgovoren.si was conceptualised by IRDO, based on the identified desire to share SR-related experiences between organisations and to generate a collective experience related to social responsibility.

Established links with stakeholders: IRDO cooperates with several companies, policy makers, national and international NGOs, on an organisational and personal level. All these people and organisations can act as stakeholders in the odgovoren.si information portal.

4.3 System 2 Management (M2),

In The Faculty of Economics and Business (EPF) – System 2, the conceptual and management SR, systems thinking and cybernetics-related sub-systems have developed over the last 30 years (Kajzer, 2009; Knez-Riedl et al., 2006; Mulej et al., 2005). The concepts are built on 40 years of tradition in social economics (Mulej & Kajzer, 1998). The faculty was established in 1959 in a socialistic environment, where the social responsibility concepts were built into the planning and managing organisations.

Holding conceptual knowledge on CyberSystemics, SR and sustainability: EPF members hold, develop and share knowledge. This can be easily elaborated from the publications with over 200 SR related papers in indexed journals.

Developed vision and mechanisms: Since the concepts have been upgraded by the next generation, the vision and related managerial mechanisms enabling internal and external SR activities are well developed, enabling SR related self-organisation by the EPF members.

Developing engaged students: one of the main EPF goals are SR-aware students, understanding the SR importance and the structures required to develop them in the organisations.

Insights in business and IT: EPF continuously cooperates with local business environment, national regulators and policy makers, and international organisations, not only passively receiving the modern concepts, but also agenting SR concepts to the environment.

4.4 Relations between systems (R1,2)

The relations between IRDO and EPF are conceptual, organisational, and personal.

- **Conceptional**: SR concepts have been developed in parallel and in cooperation with researchers of EPF and IRDO.
- **Organisational**: Several EPF professors are IRDO members and hold SR certificates
- **Personal**: The head of IRDO is a former EPF student, whereas Matjaž Mulej was her mentor at EPF. Igor Perko, EPF professor and the project academic mentor works with IRDO for the last few years on organising the IRDO conference, whereas in the past years EPF students actively participated in IRDO conferences.

4.5 Repetitive interactions (Rep *I*)

This is the first design project between IRDO and EPF. Nevertheless, the IRDO conference has, for the last 20 years, organised active participation of both organisations. Thus, several previous interactions exist between the two organisations. The observed interaction can also build on the experience of previous interactions of similar student projects executed by EPF.

4.6 Environment interactions (↓ I)

The Project was enabled by a particular call "Problemsko učenje študentov v delovno okolje: gospodarstvo, negospodarstvo in neprofitni sektor v lokalnem/regionalnem okolju 2024–2027«, issued by Republika Slovenija, Ministrstvo za visoko šolstvo, znanost in inovacije, cofinanced by the European Union (Ministrstvo za visoko šolstvo, 2024).

This supporting interaction enabled the execution of the observed interaction: the student project of designing the information portal odgovoren.si.

4.7 Sub-interaction (↑ *I*)

In the preparation of the project, several sub-interactions took place, including meetings, arranging organisational support at EPF and IRDO, identifying the student team and similar. Each of these sub-interactions could be examined with the same methodology to produce the knowledge explaining the structures and related interactions enabling it.

4.8 Results limitations

The observation is incomplete. We only provided insight to the backgrounds of the observed interaction. Other papers in the conference provided additional insights on:

(1) $f_1(O_1, O_2) \Rightarrow I$

(2) $f_2(I) \Rightarrow \Delta(E; S_1; S_2; R_{1,2})$

(4) $f_4(I) \Rightarrow \Delta(REp\ I; \uparrow I; \downarrow I; ?\, I; \leftarrow I; \rightarrow I)$

By integrating the different observation points, we can integrate multiple team member perspectives to gain a more holistic perspective of the observed project.

5 Summary

This paper examines the background and initial stages of designing the mobile web portal Odgovoren.si, envisioned as a national platform for promoting social responsibility and sustainability in Slovenia. Employing the CyberSystemic interaction observation methodology, the study explores the portal's design as a systemic interaction shaped by structures, roles, and recursive relationships. The portal aims to serve as a collaborative hub for diverse stakeholders—including companies, public institutions, individuals, and policymakers—to share news, good practices, and knowledge related to social and environmental responsibility.

The observation focuses on interactions between IRDO, a Slovenian NGO specializing in social responsibility, and the EPF at the University of Maribor, highlighting how their histories, capacities, and ongoing collaborations influence the project. Identified elements include relational structures, repetitive interactions, and broader environmental forces such as evolving societal attitudes and regulatory frameworks supporting social responsibility. So far, the analysis concentrates on a single observation point—examining the project's background context at a systemic and conceptual level—without delving into operational project activities.

Findings reveal that social responsibility in Slovenia has transitioned from marginal volunteerism to a widely accepted and regulated practice, offering fertile ground for initiatives like Odgovoren.si. However, the current observation remains partial, lacking further insights

into the project's preparation, execution, immediate feedback, and long-term effects. The study suggests that expanding the analysis to additional observation points and integrating multiple stakeholder perspectives would provide a more comprehensive understanding of the systemic dynamics inherent in sustainability-focused projects. Ultimately, this work illustrates the value of applying systemic observation methodologies to practical initiatives, enabling deeper reflection on both the processes and the environments that shape socially responsible innovation.

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