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Co-curiosity

– Building justice, joy and joint mission
into RDI partnerships

Metropolia

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Contents

‖ 'WE KEEP MOVING FORWARD,
OPENING NEW DOORS,
AND DOING NEW THINGS,
BECAUSE WE'RE CURIOUS AND
CURIOSITY KEEPS LEADING US
DOWN NEW PATHS.'
– WALT DISNEY

Metropolia is a solution-driven university of applied sciences, and this publication tackles the mystery of the co-jungle within RDI (research & development & innovation) collaboration. The publication delineates a paradigm shift and culminates in capturing the magic of co-curiosity empowered by the construction of justice and joy, all in the service of a shared mission. This evolvement transcends conventional literature exploration and established best practices, offering novel propositions for establishing participatory RDI partnership spaces. The publication portrays Metropolia's value-based systemic profiling of RDI activities. Let's embrace tomorrow and initiate a journey into the future of RDI partnerships!

1 Entering the Co-Jungle

The concurrent discourses in research and innovation are well endowed with concepts of collaboration, participation and inclusion, highlighted with a large number of loosely defined words with 'co' prefixes: co-creation, co-design, co-research, co-innovation. Participation taking place in living labs, user-centric design, user empowerment, open innovation, participatory research, responsible research, accessibility, design justice, and participation-washing all elaborate on the nature of and interactions between the RDI actors and those acted upon. Many disciplines and perspectives claim ownerships to this interaction between the innovators/researchers and the people they innovate/research to, with or about.

The purpose of this publication is to make sense of this 'co'jungle: to create a common vocabulary and conceptual baseline for dialogue for the RDI experts and enthusiasts who are engaging in the design, implementation and evaluation of collaborative RDI spaces and processes. The context is the development of these participatory research, development and innovation activities in Metropolia University of Applied Sciences, as Metropolia has chosen to further focus on and strengthen its capabilities in this area. In Metropolia, this has been called 'RDI participation in partnership'.

The publication drafts an inventory of **key concepts and frameworks** used in literature and practice. It discusses some of them in more detail from the perspective of the participative aspirations in RDI contexts, and, at points, presents some concurrent critiques from literature. As a further synthesis and 'localisation' of these concepts, some new suggestions and propositions are put forwar. Example: the title of the publication, co-curiosity, is one suggestion which is anticipated to open a new way of thinking about the participation in RDI processes.

The high-level context where we look at participation is **research** and **innovation**. In some discourses, research and innovation are conceptualised as a single entity (**R&I**), sometimes also entailing development activities within innovation. In others, design and innovation are seen as parallels instead. R&D and RTD (research and technical development) are earlier policy terms, also often covering innovation and design. In some disciplines like pharmacology, there is a clear RDI pathway from fundamental research to applied research to innovation to development to daily lives. In other disciplines like computer science, the fundamental research, the innovation, the development and the design blend and it is sometimes impossible to categorise activities into one of these. In this publication, the term **RDI** refers broadly to all concepts of **R**esearch, **D**evelopment and **I**nnovation.

Numerous research strategies have been developed across disciplines that recognise the importance of stakeholder participation and aim to embed the benefits and ethos of participation into the RDI process (Burns et al. 2022). The research terminology has evolved discipline-specifically (Hoekstra et al. 2020; Vaughn & Jacquez 2020). Figure 1 describes examples of approaches in RDI activities in literature that underline stakeholder participation. The dimensions and meanings attributes to participation vary significantly across different strategies and methods used in RDI projects (Vaughn & Jacquez 2020). On one hand, participation in research or innovation activities may be limited to contributing as a knowledge producer, and on the other hand, it may involve co-decision making with researchers/innovators. Although the nature of participation varies, all of the approaches underline RDI as a collaborative process that thrives beyond knowledge generation and for real-world impact (Vaughn & Jacquez 2020).
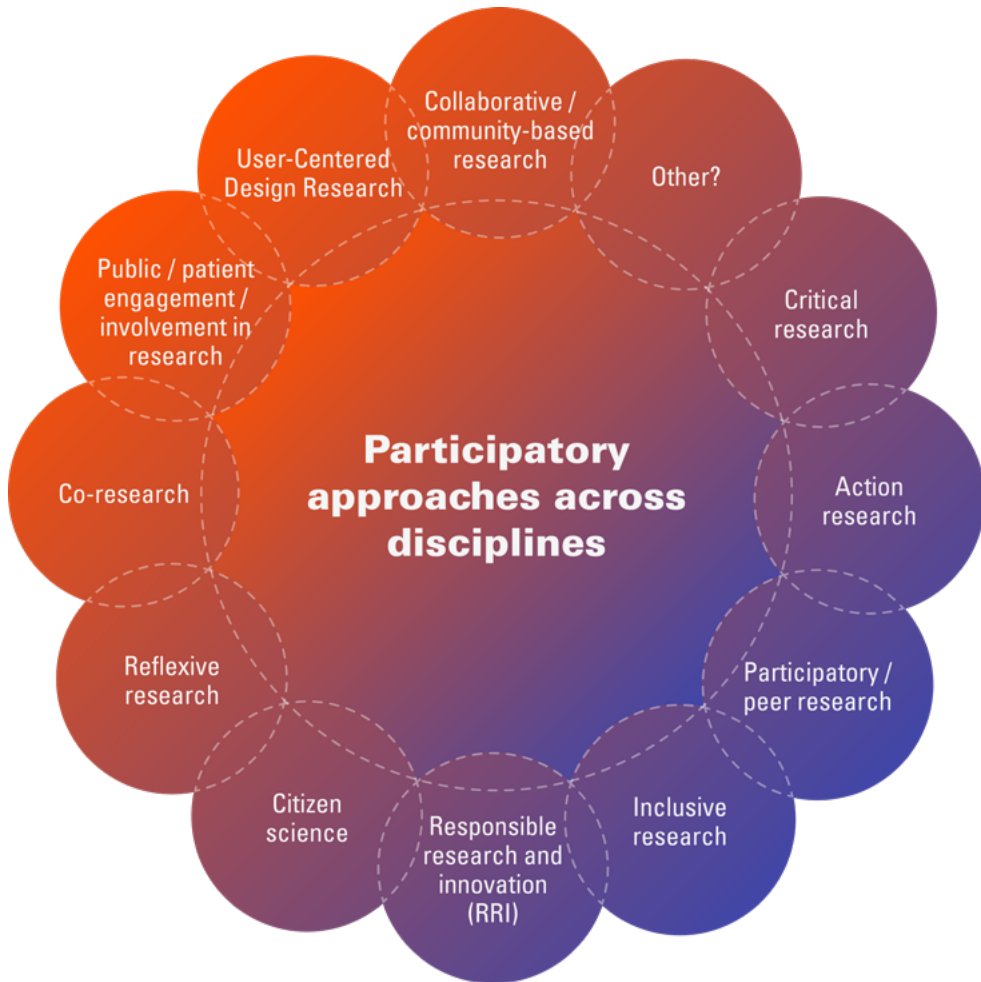
Figure 1. Examples of participatory research approaches across disciplines (Hoekstra et al. 2020; Vaughn & Jacquez 2020).

A popular concept with a wide interpretation space is **stakeholder**. It has a long history: The word stakeholder first appeared in English in 1708, having its roots in gambling (Oxford University Press 2023). The stakeholder meant the holder of a wager; the stake being 'that which is placed at hazard' – a bet. Stakeholder was the way to describe a person who takes the bets. Currently it is used to describe any entity that has an interest, can affect or is affected by the actions in question.

The prefix **co-** originates from Latin preposition 'cum', meaning 'with'. Enter the co-jungle:

Co-research is a concept to describe 'inter-organizational collaboration between academics and practitioners' (Hartley 2000), which initiates a dialectical inquiry process by harnessing the synergistic viewpoints, interests, competencies, and knowledge foundations of both academics, practitioners as well as citizens. Kulmala et al. (2023) defines co-research as a 'multi-perspective approach to knowledge production that centers on valuing participants as experts in their lives and equal partners with professionals'. This method is driven by participants' questions and research aspirations, fostering active partnerships that consider all interests. Its core goal is dismantling power imbalances and acknowledging diverse knowledge from lived experiences. Ultimately, co-research seeks to authentically boost interaction, openness, and science's societal role. (Kulmala et al. 2023.)

Co-design originates from design discourse, notably the participatory design tradition developed in Scandinavia in the 1960s. It is currently often loosely defined and used as an umbrella term that entails participatory, open design and co-creation processes within the design activities, see for example Routledge International Handbook of Participatory Design (Simonsen & Robertson 2012).

Co-creation has its history in business literature since the 1970s, stemming from customer participation in production (**co-production**) of private and public services. Business consulting giant Gartner defines co-creation as "a collaborative initiative between companies and their customers enabling the joint design of products and services, where these initiatives include the creation of goods, services and experiences, amplifying the process via the inclusion of client intellectual capital."

Co-innovation has been recently used in innovation studies and open innovation practices, and has been defined for example as a 'shared work of generating innovative and exceptional design conducted by various actors from firms, customers, and collaborating partners' (see Saragih 2018).

Co-curiosity

Innovation is the practical implementation of ideas that manifests as new goods or new services, or enhancement of pre-existing products or services. Innovations can be categorised: **incremental innovations** improve existing services or goods within the existing operating models, and **radical innovations** create completely new operating or business models. **Sustaining innovations** do not affect existing markets; **disruptive innovations** generate fresh markets and value networks and, in the end, replace the established market-players or operating models (Bower and Christensen 1995). As an example of suggestions laid out in this publication, the concept of the equal right to disrupt is presented in Chapter 3.

Co-curiosity

It should be noted that the meaning and connotations of many of the concepts has changed and will change with time. As an example, today the concept of 'innovation' is closely tied to an **economic growth discourse**, but it has been a politically debated concept for most of history (Godin 2017). Innovation was a rhetorical pejorative tool used by the Catholic Church and many of those wishing to maintain the status quo of the pre-industrial societies. Prior to the twentieth century, innovation was regarded as a wrongdoing, explicitly prohibited by laws, and employed as a linguistic weapon by those who resisted change. "In 1548, Edward VI, King of England and successor to Henry VIII, issued a Proclamation Against Those That Doeth Innouate. The proclamation places innovation in context, constitutes an admonition not to innovate and imposes punishments on offenders. After World War 2, a whole new set of arguments develops: research and development (R&D) leads to innovation and innovation to prosperity" (Godin 2017).

While participation and inclusion are commonly and widely agreed **value goals**, the specific **organisational designs** that lead to participation in RDI are highly debated, as are the **qualities of the participation**. As an example, while the living lab method is often seen as the 'gold standard' of citizen engagement in innovation processes, there is a long history of critique of living labs' participatory mechanisms, both from the point of view of their ethical standing, as well as from the point of view of the efficacy of the methods used

to deliver the participatory insights they are promising (Kommonen & Botero 2013). As another example, the notion of participation-washing has recently emerged, as a loose parallel to green-washing used in environmental policy and sciences (Sloane et al. 2022).

It is easy to declare an honest aim to build an inclusive, participatory and collaborative RDI or process, but when facilitating, guiding, driving, inspiring, enabling, blocking or accidentally discouraging human collaboration, the devil is in the details. The outcome of inclusive aspirations lies in explicit answers to questions like: who are those who participate; who are left out – intentionally or unintentionally; why do these people participate; how they could, should and would participate; what do they get out from the participation; who decides what are the topics to participate to; who makes the decisions; who reaps the benefits of the participation; and so on. Use of digital platforms and rigid processes for participation tends to lock the structures of, and sometimes accelerate, the unintentional participation biases. There are **tensions** to balance, and some mutually exclusive selections to be made, and efficacy traps to avoid (figure 2).

|	vs	
Person as end-user	vs	Person as citizen
Person as subject	vs	Person as partner
RDI as Work	vs	RDI as Joy
Interests of the RDI performer	vs	Interests of the person
Researchers and research-based knowledge are seen hard-to-reach from the point of view of people	vs	People (subjects) are seen hard to reach by the researchers
RDI-originated niches of the everyday	vs	Everyday life of the person
Academic concepts, frameworks and methods	vs	Everyday concepts and methods
User-testing the solutions	vs	Co-creating the solutions
Behaviour change – nudging the persons to different lifestyles	vs	Current behaviour – improving aspirations of daily lives of the person
Focus in marginalised groups	vs	Focus on empowering lead users
Technological solutions	vs	Social and policy innovations
Applying existing knowledge	vs	Producing new knowledge
Private sector solutions (serving private interests)	vs	Public sector solutions (serving common good)

Figure 2. Examples of tensions and design choices for participatory RDI (non-exhaustive).

In this publication, Chapter 2 looks at the concepts of agency, participation and inclusion and explores the applicability of the concepts from the perspective of equity, justice, and ethics. It leans towards social sciences and humanities. Chapter 3 presents some key frameworks and methods widely used in the current state of play in participatory RDI. It builds on the field practices as well as innovation studies about these practices. Chapter 4 explores the topic from the perspective of power, discourse framing, and guiding direction given for innovators: Whose participation we are talking about, and who benefits from it, and who is affected by the negative effects. It refers to the policy developments and political aspects of participatory RDI. Chapter 5 describes the insights and learnings from participation in partnership that has taken place in Metropolia. Finally, Chapter 6 aims to bring the literature insights together through the new concept of co-curiosity.
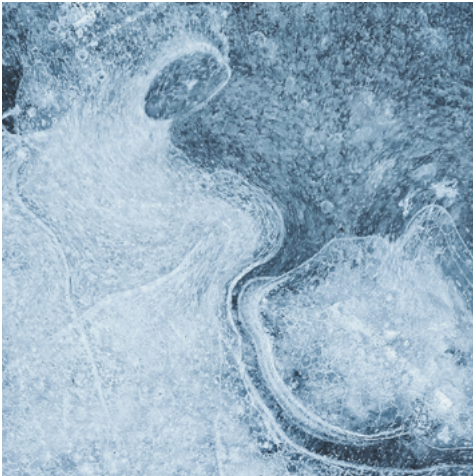
A vast number of conceptual opportunities exist when discussing participation in RDI. This publication does not try to cover everything that could have applicability in this domain. The selected framing aims to cover some concurrent discourses that are anticipated to be the most useful ones within Metropolia UAS, to provide terms commonly used by practitioners and researchers when they are creating such collaborative spaces and platforms, to elaborate on the aspects of participation in those approaches, and to provide selected most relevant critique made towards the mainstream approaches.
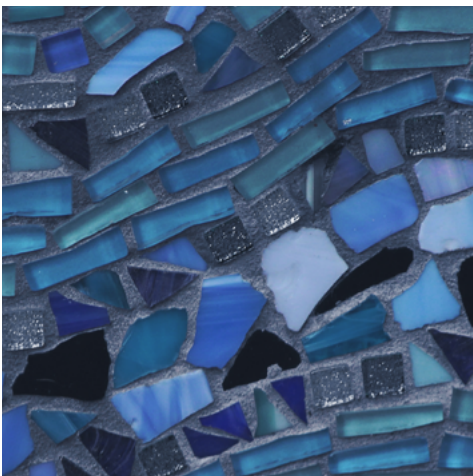
Also, the aim of this publication is not to create a guidebook on how to set up such settings, for example living labs, nor to describe best ways for facilitation of innovation, nor to review technical accessibility regulation. The anticipated reader is a generalist higher education expert dealing in some way with innovation and research practices, and expected to be already familiar with the common vocabulary and practices of RDI and facilitation. The publication excludes several domains that would have relevance. Notably, the following areas are deliberately left out of scope:

▸ inclusion and diversity specific to the **research data management** strategies e.g. how to collect representative data for research, or how to create a balanced group interview

▸ **group processes** and inclusion tactics in **facilitation**, including issues like how to avoid group-think or how to nudge the lurkers for participation, and so on.

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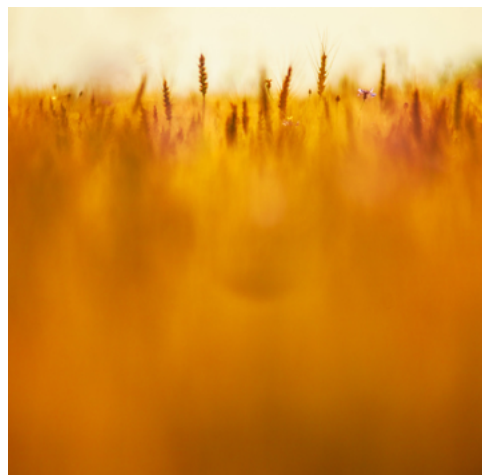
2 The Right to Disrupt – Participation and Justice

Many concepts in literature in this domain can be seen as prescriptions: pragmatic and normative guidelines for professionals who are engaging in participatory RDI activities where the other persons, who are 'external' to this RDI activity, are to be interacted with. In these settings, usually the topic of interaction is an interest arising from, or is relevant to, the innovator or the researcher. More often than not the interaction is conducted with an expectation that by interacting with this external participant, the quality of the innovation or research process will improve – the external participants 'add in value' to the work of the **RDI performer**.

While, for example, practices in user innovation and co-research discuss creating more equal settings for this interaction, the **power disparity** remains due to the nature of the activity – typically someone's job is to conduct participatory RDI and they get paid for that, as well as they have the agency over decisions over resources used for this interaction, and who to interact with. Some attempts to overcome the financial power disparity exist – guidelines for compensating stakeholders for their involvement in RDI activities have been developed to enhance the recognition of their valuable input to the knowledge production as well as to diminish the power imbalance between stakeholders and researchers/innovators (Pozniak et al. 2021).

Agency, or human agency, is a concept used in various humanities and social sciences from philosophy of action to cognitive psychology to education and learning. A textbook definition of agency is the capacity of individuals to act independently and to make their own free choices (Barker 2005). One grand social sciences debate is between how structure and agency shape human behaviour. For example, the processes, tools and practices of living labs presented in the next chapter could be seen as the structure in the RDI context which sets the ground and limits for the agency of the participants.

Collective dimensions of agency have been elaborated in for example educational sciences (Hakkarainen 2004). The practice of **shared agency**

and **co-agency** has been studied in the field of rehabilitation. **Co-agency** enables meaningful participation of all parties in collaboration through collaborative planning, decision-making, commitment, and shared responsibility (Järvikoski et al. 2013; Sipari et al. 2022a). Co-agency expresses the embedded and co-constructed nature of agency. Sipari et al. (2022a) has co-developed a template to enhance agency and building co-agency in a research team.

Participation has been articulated as one of the central problems in sociological, political and welfare discourses during the last decades. Participation is not a unified concept between the disciplines using it (Siisiäinen 2014). Public discussions and concerns have concentrated on so-called non-participation: the problems of political non-participation, the 'passiveness' of people in the 'margins', the socially excluded or marginalised people, about long-term-unemployed, ethnic minorities or migrant groups that could or should be empowered, activated or integrated to society. One taxonomy looks at 'four faces of involvement/participation' (Siisiäinen 2014) at table 1.

In this four-face model, the 'genuine participation' is defined as "actor-generated, self-productive purposive action in which the actor (or actors) participate directed by their interest in a social field," where an actor makes a more or less conscious decision to participate according to the dispositions, life history and experiences internalised into their habitus (Siisiäinen 2014).
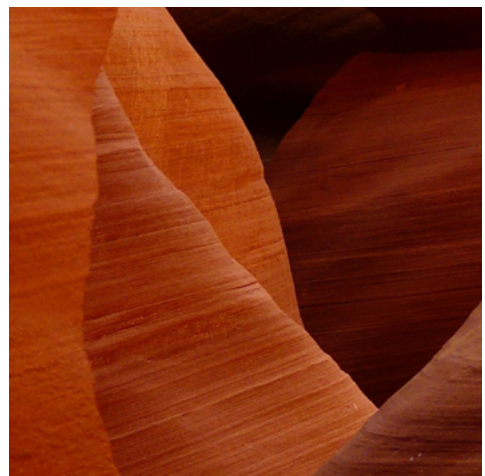
DEGREE OF ACTIVENESS OF THE ACTOR		
MOTIVATING AGENT/ DRIVING FORCE ('MOTOR')		**Actor's role: active**	**Actor's role: passive**
	Actor her/ himself	**Participation** ▸ interestedness ▸ heterodoxa ▸ activist movements ▸ conscious non-participation ▸ (movement) participation as self-production of the actor (collective)	**Adaptation** ▸ doxic conformism (symbolic power) ▸ acculturation ▸ indoctrination ▸ involvement of users
	Other agent	**Engagement – Activated/ encouraged participation** ▸ orthodox integration ▸ enabling inclusion ▸ education of the individual as the entrepreneur of her/his life ▸ association as schools of democracy or social citizenship	**Coercion** ▸ total organisations and institutions ▸ ascribed memberships in fundamental communities ▸ obligatory 'participating' e.g. voting ▸ certain forms of conditional support via obligatory involvement ▸ symbolic violence

Table 1. Four faces of participation (Siisiäinen 2014).

Arnstein (1969) described the degrees of citizen participation through **the Ladder Model of Citizen Participation** (figure 3), looking at citizen involvement in the planning processes, which is used to analyse citizen participation in decision-making in these processes. The ladder model also presents a normative nudge to 'improve' the quality of participation, with the mindsets and approaches that change when moving 'up' the ladder.

When planning the participatory RDI settings, the ladder model could be used to be **explicit and aware** of what type of participation is anticipated and suitable for the issue at hand. It is also useful in analysing how well the formal aspirations and expectations of the co-creation processes are aligned to the realities of the operations.

Domain-specific participation models have emerged. For example, **the Lundy model of participation** (Lundy 2007) from education context helps to understand and involve children in decision-making. The Lundy model is based on four key concepts, often thought of as sequential steps: Space, Voice, Audience and Influence. Space entails creating a secure and inclusive space for children and adolescents to voice their opinions; Voice is about providing information and support; Audience is about ensuring that the children's and adolescents' opinions are communicated to the right people; and Influence is about confirming that the perspectives are treated with gravity and translated into action. (Lundy 2007.)
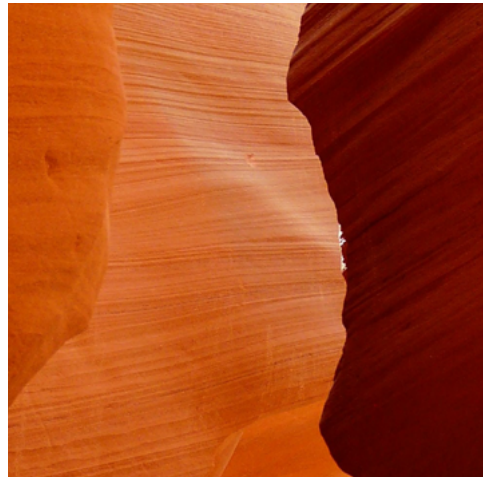
Arnstein's Ladder (1969)
Degrees of Citizen Participation

Citizen Control

- Citizen Control
- Delegation
- Partnership

Tokenism

- Placation
- Consultation
- Informing

Nonparticipation

- Therapy
- Manipulation
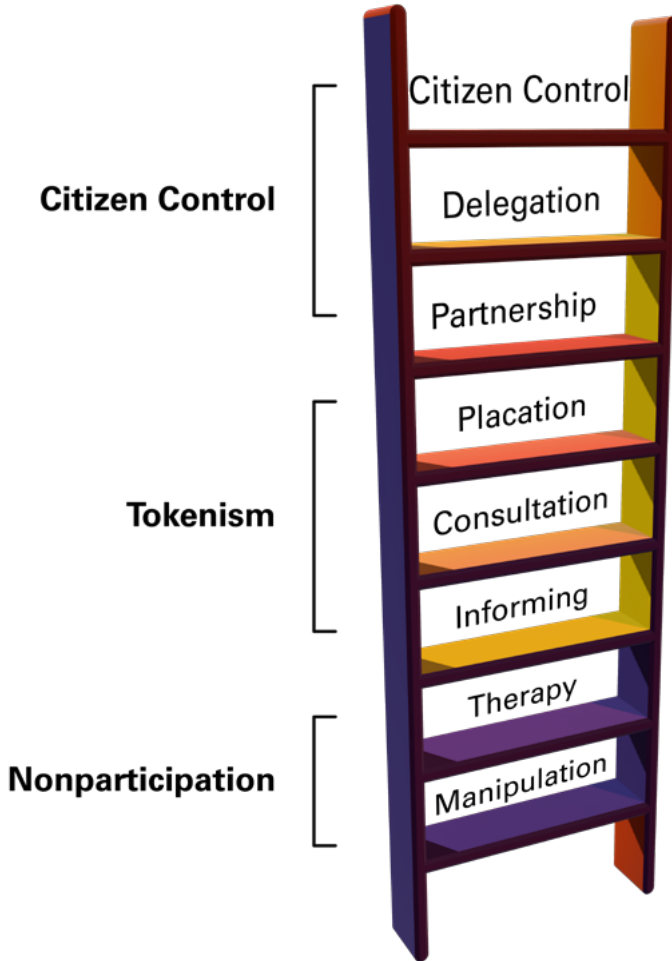
Figure 3. The Ladder model of citizen participation (Arnstein 1969).

A number of tools to assess the qualities of participation exist. For example, utilising the participation assessment and role definition together with the stakeholders, Smits et al. (2020) published an **involvement matrix** for patient and public involvement in research projects – a tool that supports the discussion and agreements on individual roles, expectations and concrete ways of being engaged in research activities. The Involvement Matrix presents roles for public stakeholders as listener, co-thinker, advisor, partner, and decision-maker roles in the preparation, execution, and implementation phase of the knowledge production process (Smits et al. 2020). As another example, the **co-creation radar** (Rask 2019) is a model and tool developed for a 'comprehensive evaluation of participation', originating in observations that most of the evaluations and assessment of public participation activities had been insufficient and too narrow in scope (figure 4).

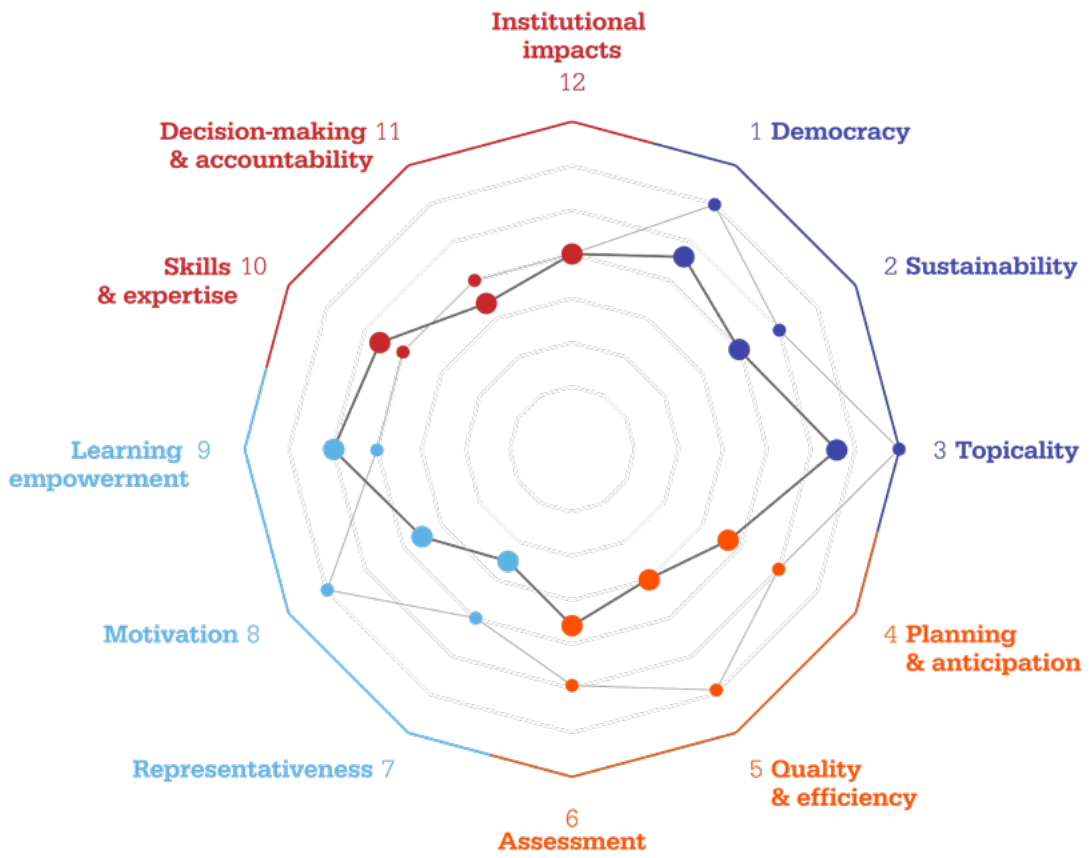Figure 4. Example use of Co-creation radar (after Rask 2019).

Participation-washing is a term recently emerged in some disciplines. It could be seen to describe various interaction situations where the premises and promises of the participatory interaction are not aligned between those who are invited to participate, and those who are arranging the participatory activities or where the act of commissioning participation is conducted as a cultural, social or economic ritual. Experiences of participation-washing, or dissonances in the expected means and objectives of participation can also arise unintentionally, or contrary to the best intentions of the participation. For example, in a recent study (Sitra 2022) a substantial imbalance was found between the preferences of the citizens (participating) and the decision-makers (commissioning participatory processes). The citizens strongly preferred direct, anonymous, easy digital participatory methods. The decision-makers strongly preferred face-to-face interaction. Participation-washing can also be a powerful conceptual and communication tool to be used to engage in critical thinking of the plans and activities of the RDI processes. The RDI practitioner could ask: "what evidence do we have of that our participatory RDI is not merely participation-washing?"

A **Theory of Justice** (Rawls 1999) is a political philosophy approach that outlines **justice as fairness**. It comprises three elements: the equality of people in rights and liberties; the equality of opportunities for all; and the arrangement of economic inequalities

on benefit maximisation for those who are the least advantaged. It arises from a thought experiment of 'original position': a person is asked to select the principles of how the society is structured, but in a way that the person has no knowledge beforehand of what position in the society they will end up themselves, preventing the person to know their ethnicity, social status, gender, or anyone else's notion of how to live a fulfilling life.

The theory posits that these decisions made behind the 'veil of ignorance' of the original position would lead to a just and fair society. The Rawls' theory of justice can be useful heuristically when planning participatory RDI processes. The RDI planner could ask herself: "If you were to be the external 'user' to be invited into participation, how would you like the process to proceed?"

Epistemic injustice (Fricker 2007) is a concept that argues that social inequalities are the root of epistemic injustices. Epistemic is a term that means related to knowledge or to the degree of the validation of this knowledge. These inequalities come into play because we engage in epistemic practices as socially situated epistemic agents. Within epistemic injustice, testimonial injustice is unfairness linked to placing trust in someone's word. This can happen when someone is overlooked or their credibility is questioned for example because of their sex, sexuality, gender presentation, race, disability, or identity. Hermeneutical injustice is injustice related to how people interpret their lives: it occurs when someone's experiences are poorly comprehended, either by themselves or by those around them. This could happen, for example, because the words used by the RDI performers to structure and describe the lives of the people participating in the RDI process are not fully capturing or communicating the essence of the phenomenon.

THE RDI PRACTITIONER COULD ASK: WHAT EVIDENCE DO WE HAVE OF THAT OUR PARTICIPATORY RDI IS NOT MERELY PARTICIPATION-WASHING?

Co-curiosity

A number of popular on-line memes have described the theories behind and differences in conceptualisations of notions **Equality, Equity and Justice** (figure 5). The **Equity theory** stems from behavioural psychology and its aim is to elaborate on determining the 'fair distribution of resources' in interaction (Adams 1965). It is grounded on the social exchange theory, which posits that individuals' experiences of under-reward or over-reward will lead to experience of distress, which will in turn lead to efforts to restore equity. Equality in the RDI process guides the examination of knowledge production and knowledge integration – what kind of practices enable equitable participation from the beginning to the end of the process and beyond, to the utilisation of the results.

Intersectionality refers to recognising how various forms of inequality often intersect and exacerbate each other's effects (Crenshaw 1989). An intersectional approach shows that 'the same person can experience discrimination for multiple reasons, leading to the accumulation of experiences of discrimination'. For example, one cannot talk about gender or ethnicity as isolated, independent factors if both are part of a person's identity and experience of discrimination. Intersectionality highlights the interconnectedness and complexity of different forms of unfairness and discrimination. Individuals may experience discrimination and marginalisation in multiple ways, and these experiences are often intertwined and reinforcing. It emphasises the importance of understanding how privilege and advantage intersect, and how certain groups may benefit from systems of oppression while others are disadvantaged. In addition to negative impacts, benefits can also accumulate intersectionally. In technology-driven RDI, this intersectionality of accumulated benefits have been seen in several popular technology products that are designed to be used and purchased by affluent middle-class men.

Design justice is a framework and movement within design practice that seeks to address and challenge the ways in which design has historically perpetuated social inequalities and injustices (Costanza-Chock 2020). Many collaborative RDI activities, especially those taking place in living labs and open innovation settings, are explicit design processes or facilitated with design methods. Design justice aims to create

Figure 5. Differences in conceptualisations of notions Equality, Equity and Justice.

more equitable and inclusive design practices and outcomes, and challenge the ways in which design has historically perpetuated social injustices. It recognises that design is not a neutral or objective activity, but rather shaped by cultural, social, and economic values and interests. Design justice often entails centring the needs and experiences of marginalised communities, and working actively to counteract the harm and exclusion that has emerged from the current practices. It also seeks to empower communities to be active participants in the design process, rather than passive recipients of design decisions made by outside experts. **Universal Design** and **Design for All** are design approaches which aim to improve accessibility and inclusion of the design processes and design outcomes (Steinfeld & Maisel 2012).

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Inclusion has been used as a concept widely in disability rights, disability studies (Nind et al. 2020) and education. In disability studies it typically addresses means to ensure that disabled individuals in their everyday life have access to resources and opportunities in a manner similar to their peers without disabilities. According to UNESCO (2023), **inclusive education** strives to identify and eliminate all obstacles to education, encompassing everything from curriculum design to teaching methods and practices. **Accessibility** is defined as the design of products, devices, services, vehicles or environments so as to be usable for individuals with disabilities (European accessibility act).

Inclusive and accessible research is a concept used to describe inclusion and accessibility of the RDI processes: 'It gives voice to those who may be marginalised or disadvantaged, ensuring that research processes serve to rebalance power and shift the status quo. Inclusion can relate to gender, to people with disabilities or to other dimensions of disadvantage. Careful and sensitive engagement approaches are required, ideally aiming to shift relations and practice to place local voices at the centre of research processes.' (RDI Network). Participatory RDI practices could employ inclusive ways of working, or analyse the accessibility of the RDI spaces. However, the use of the words 'inclusion' and 'accessibility' may, in the minds of many participants, only refer to the rights of the people with disabilities or the elderly.

Discrimination refers to the unequal treatment of an individual based on a personal trait, where one person is treated less favourably than others (European Union Charter of Fundamental Rights). **Protection against discrimination** in Europe can be found within both the EU, the Council of Europe law, and in national legislations. In legislation, all human beings are entitled to equal treatment. Age, origin, nationality, language, religion, belief, opinion, political activity, trade union activity, family relations, state of health, disability, sexual orientation and other personal characteristics are factors giving rise to discrimination that this legislation is in place to fight against.

The discrimination regulations apply in a variety of contexts like employment and education. The scope of legal protection against discrimination has also been expanding. The EU 'Horizontal Directive' has been under debate in EU institutions, and it has been anticipated to extend the legal protection to other contexts as well, such as accessing goods and services (European Parliament 2023). The primary aim of the EU's non-discrimination law is not solely to prevent ongoing discrimination, but also to attain substantive rather than merely formal equality. **Substantive equality** means recognising that the societal status quo is not neutral and levelling the playing field by establishing fair procedures to account for historical inequalities.

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In Finland, the Non-Discrimination Act obliges public authorities, educational institutions and employers to endorse equality in their activities: "Promoting equality means actively making sure that everyone can receive the services of authorities, go to school, study and work equally" (Ministry of Justice, Finland 2014). Equal access to the RDI processes, promoting equality to these RDI processes, and 'fair procedures to account for historical inequalities' in the RDI processes are thus legal obligations for an educational institute in Finland.

Participatory RDI is conducted in physical and digital spaces where the participants meet and interact. A **Safe Space** is "a place or environment in which a person or category of people can feel confident that they will not be exposed to discrimination, criticism, harassment, or any other emotional or physical

harm" (Oxford University Press 2023). To create a safe space for RDI participants to express their views and to start collaboration, the values and guidelines for interaction can be discussed and agreed on together. The rules for safe and participatory space can be modified and utilised in digital and live encounters. The following example of a common Safe Space guideline was utilised in the collaborative development process of the Participatory RDI Partnership framework in Metropolia (table 2). The participants in the development process were citizens, professionals, researchers and other experts from different disciplines internationally.

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- ▸ We are all here to learn and collaboratively develop the Participatory RDI Partnership framework
- ▸ Let's create a safe space to learn, share and wonder together by acknowledging that
  1. We are all equal participants, regardless of background. Let's all treat others with respect.
  2. Curious dialogue is a method and a goal. Build on top of others' thoughts ('yes, and' instead of 'no, but').
  3. Thinking aloud is encouraged. It's ok to debate and change opinions. We call it growth.
  4. Keep an open mind. Listen and try to understand others' perspectives.
- ▸ Identifying a focus among wicked problems is tricky. Finding innovative solutions is particularly difficult among the like-minded.
- ▸ Co-creation where we mix diverse fields, multiple kinds of expertise and different perspectives allows us to face – and embrace – the richness that our differences bring.
- ▸ Consensus is not necessary. We need and appreciate multifaceted understanding. Look for what unites, and treat diverging thoughts to better understand the whole.

Table 2. Safe Space guidelines for RDI partnership used in Metropolia.

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RDI Justice

The concepts presented in Table 2 could be expanded towards a new approach of **RDI Justice**. The use of the term justice would connect the participation to concurrent theories and practices that build on the theoretical frameworks of equity, justice and intersectional approaches. Based on the principles of design justice, principles of participatory RDI Justice could include:

- ▸ recognising and challenging power imbalances in RDI practice and outcomes;

- ▸ prioritising the needs and perspectives of marginalised communities in the RDI process;

- ▸ engaging in participatory and inclusive practices that involve community members and stakeholders;

- ▸ being accountable for the social and ethical implications of RDI decisions and outcomes;

- ▸ recognising and addressing the historical and cultural contexts that shape RDI practices and outcomes.

The following pragmatic guidelines could help establish RDI Justice in practice:

- ▸ the use of **equitable, inclusive and accessible** methods, tools and mindsets;

- ▸ being **aware of the qualities and differences of the planned and realised participation**, for example by assessing it with the Ladder model or co-creation radar;

- ▸ setting up **safe RDI spaces**;

- ▸ establishing **the equal right to participate in RDI** as a parallel to the current equal right to education;

- ▸ establishing the principle of **the equal right to disrupt** that would explicitly aim to open up all of the levels of the RDI opportunities to all of the participants;

- ▸ ensuring that the aspects of participatory RDI are addressed in the organisation's equality promotion plan.

3 Promoting the Living Lab User to an RDI Citizen

User has been a long-term prevailing concept in various fields in the development of products and services. **End-user** is used to refer to the person using the outcome of the RDI process – the user of the new solution or the user of the new knowledge produced by the RDI performer in the RDI process. A trail of conceptual developments exists from human-computer interaction to user-centric design to user-driven design to user experience and user innovation. The conceptual entrance of the users, first to narcotics, was in 1935, and later on to computers in 1967. The term 'user-friendly' was coined in 1977, beginning the anticipation that the RDI outputs should be aligned to the needs and aspirations of their users (Oxford University Press 2023). 'User' was already in there (with computers at least), when innovation and design discourses began to elaborate their participatory approaches. A number of methods and frameworks exist to connect the users to the RDI processes – addressing the participation of the user.

Living laboratories (**Living Labs**) are arguably the most widely used contemporary framework for planning the structures of participation in collaborative RDI (ENoLL). The European Network of Living Labs (ENoLL) is the international association of Living Labs, set up in 2012. It defines Living Labs as "real-life test and experimentation environments that foster co-creation and open innovation among the main actors of the Quadruple Helix Model". Living labs are intermediaries between citizens, research organisations, companies and government agencies, and they focus on co-creation, rapid prototyping and testing, and scaling up innovations and businesses. They are 'living' – a laboratory approach, but embedded in a real-life setting. Living Laboratory can be seen as a methodology between open innovation, user-centred design and participatory design (Dell'Era & Landoni 2014).

Living Labs often place themselves in the innovation discourse. Innovation can be characterized as the practical implementation of ideas that leading to the introduction of novel products or services, or enhancements in the provision of existing products or services (e.g. Schumpeter 1934). RDI processes are often intertwined with various kinds of innovations, which are born, ideated, developed further, validated, tested, commercialised or pivoted in such processes; the innovations in these processes can be technical, social, process innovations, policy innovations, among other types.

Open innovation is a concept describing such a process of innovation that expands beyond the borders – silos – of single organisation: "the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation" (Chesbrough 2003). Open innovation is a "more distributed, more participatory, and more decentralized approach to innovation". The term was coined by Henry Chesbrough to capture this 'open' process in industrial and commercial innovation settings – how companies could innovate better together with other companies and research organizations, and how the industrial RDI process rarely is linear 'technology transfer' from research to market. The same term is also sometimes used for **open user innovation**, a conceptual approach emphasising that end-users, rather than manufacturers, are responsible for a large amount of innovation action and outputs (von Hippel 2006: 216).

Various typologies and continuums have been used in describing the participatory facets of open user innovation: design researchers differentiate between **user-centred innovation** (focusing on understanding the users' needs), **user-driven innovation** (creating products inspired or co-created by the users) and **user empowerment** (giving the users some agency on the process to make or customise their own innovations).

Living Labs can be seen as **Open-Innovation Networks** and in the literature reviewing existing living labs, four

different typologies of such networks have been identified, 1) utiliser-driven; 2) enabler-driven, 3) provider-driven, and 4) user-driven (Leminen 2012) living labs. Also, open innovation platforms and open innovation ecosystems are sometimes used to describe the activities and practices of organising this participatory RDI, and the term smart district (and smart cities) sometimes refer to the place-based enabler-driven living labs orchestrated by the cities. The terms **test bed** and **innovation platform** have been often used, especially by the public sector living labs, to describe the enabler-driven or utiliser-driven open innovation networks – where, characteristically, users/citizens play the role of end-users testing the solutions made by companies, for the purpose of the utiliser (typically a public sector entity) being able to purchase these solutions from the companies in the future.

Orchestration means the act of enhancing and directing the collaboration in the local innovation ecosystems among different stakeholders. Pragmatically, almost always, each living lab has a dedicated organisation or a unit responsible for orchestrating, coordinating or managing the living lab. Literature suggests that for successful innovation ecosystems, there is an essential **ecosystem competence** that is the 'ability to manage dynamic strategic interactions' related to the RDI process. Studies on the roles of orchestrators propose three ecosystem-based dynamic capabilities that are important for an orchestrator: environment scanning, collaborative arrangement, and value integration (Valkokari et al. 2017).
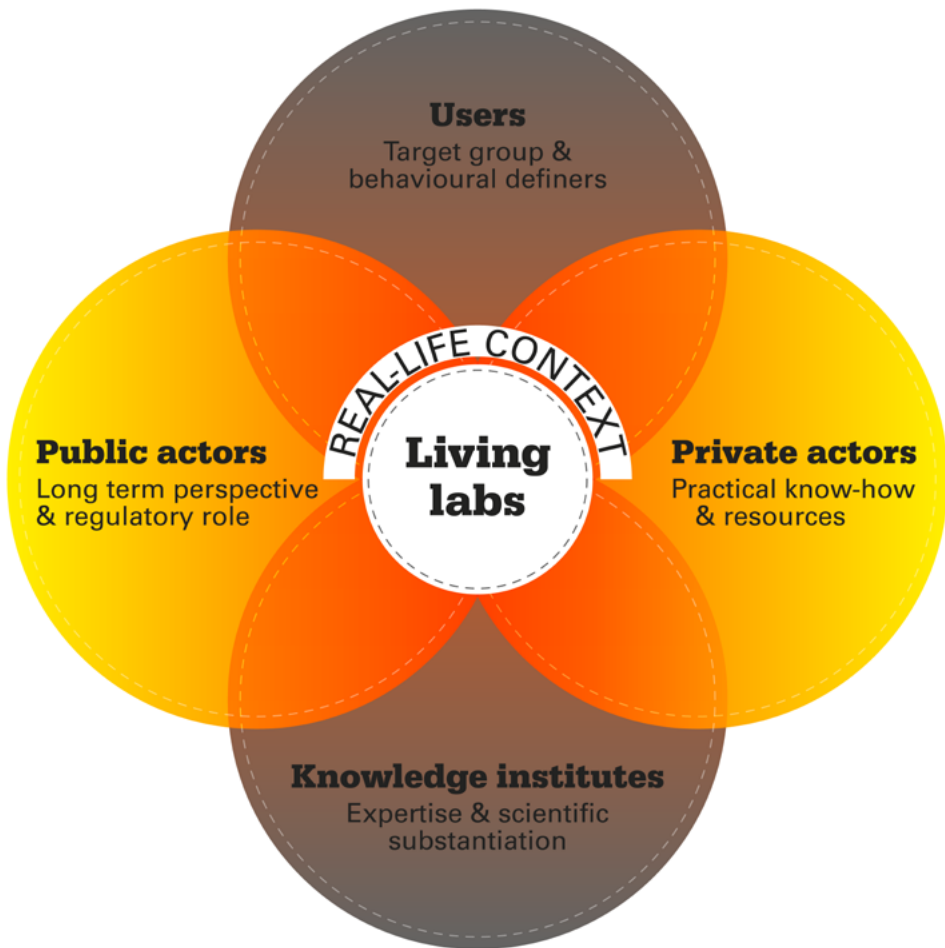
Co-curiosity

Figure 6. Quadruple Helix (ENoLL 2023).

Quadruple Helix (Carayannis 2010) is the de facto framework used for organising and analysing the participation of a living lab. The European Network of Living Labs describes this as follows: "Quadruple Helix Stakeholder engagement is a central factor in Living Labs. It brings together stakeholders from public institutions (at the level of cities, regions & local, regional, national & European policy), private organizations (start-ups, SMEs, corporations), as well as academia (researchers, universities, research organizations) and citizens. This leads to the inclusion of representatives from each sector in innovation processes, creating results from which all involved stakeholders can benefit." (figure 6).

The innovation helix-concept, borrowed from the DNA double helix, often describes the stakeholders of a living lab. Its origin is in the **triple-helix** model (collaboration structures between the public sector, the research institutes, and the companies), and it has developed to the current de facto use of quadruple-helix (as triple helix but civic society involved as an additional group of actors), and is emerging towards competing fifth helices – penta-helix and quintuple helix models. Quintuple helix, a term also coined by Carayannis (2012), adds in 'natural environment' as the fifth stakeholder helix.

The concept of **Penta Helix** builds on the critical observations of citizens' role in the European implementations of the quadruple helix living labs. The original quadruple helix definition defined the fourth helix as the "culture- and media-based public and civil society, including, for example, sociological concepts like art, the creative industries, culture, lifestyles, media, and values." The ENoLL practice of defining the users as the fourth helix has often led to settings where the users/citizens participate in the RDI process mostly in a test user role for a solution/product that someone else, often a private company, is producing (Calzada 2020). The role of users has been to assess or to validate the product or a prototype: Deliver user feedback for the developer of the product, and deliver marketing proof points of feasibility for the enablers/utilisers of the innovation.

Co-curiosity
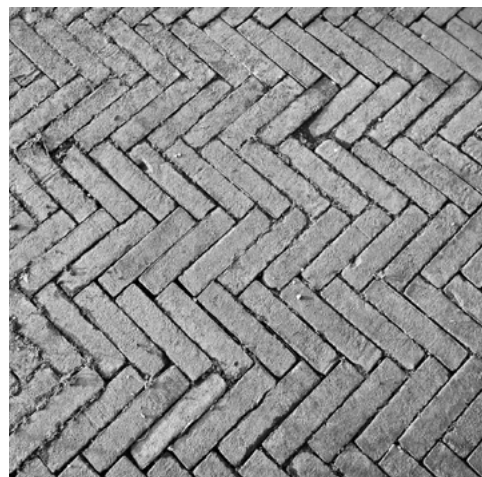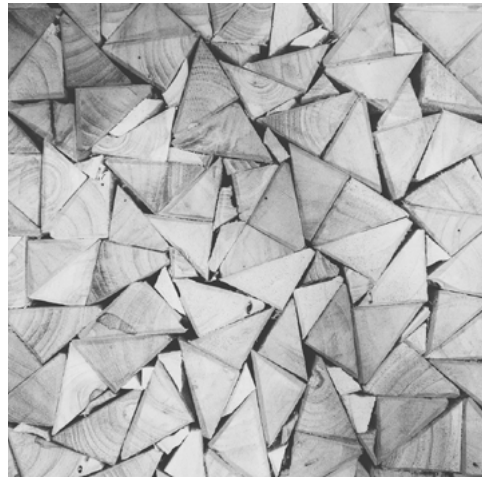
	TRIPLE-HELIX	QUADRUPLE-HELIX	PENTA-HELIX
STAKEHOLDERS	Public Private Academia	Public Private Academia Civic Society	Public Private Academia Civic Society Social Entrepreneurs and/ or Activists
CITIZENSHIP RESPONSE	Invisible and Passive	Reactive and Passive	Proactive
GOVERNANCE SCHEME	Technocratic top-down	Institutionalised bottom–up	Emergent/ democratic bottom-up

Table 3. The transformation of the citizenship response and governance of the participation (Calzada 2020).

The Penta-Helix concept (Calzada 2020) was built on insights from studying a number of European smart city living labs. It adds a **stakeholder class of Social Entrepreneurs/Assemblers/Activists** to the helix model: "The fifth helix is embodied by social entrepreneurs and activists – who play the role of intermediaries, bricoleurs, brokers, and/or assemblers." These serve as the primary catalysts for change and, operate in the boundaries by linking the other four entities within the quadruple-helix, as pollinisers and cross-sectoral ambassadors (Calzada 2020). This transforms the citizenship response and governance of the participation (table 3).

According to Calzada (2020), in isolation the triple-helix lacks the ability to trigger unforeseeable and innovative dynamics due to its rigid and bureaucratic interaction among stakeholders; and nor can the quadruple-helix, on its own, harness inherent transformative responses, as it relies on an institutionalized bottom-up approach where citizens may passively respond to proposed initiatives. In the European smart city living lab implementations he studied, 'these implementations not only reduce the interdependencies among stakeholders to technocratic Public-Private-Partnership (PPP) models, but also fail to question the identities of strategic

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stakeholders and how they prioritise their business/social models'. These aspects are putting democracy at stake in smart cities (Calzada 2020).

The calls for improved user empowerment – citizen empowerment – started already in the early years in the Living Lab history. Already in 2013, based on studies on user-driven open innovation practices in Finland, Kommonen & Botero proposed that in order to realize the ideal of a 'user driven open innovation ecosystem', **next generation Living Lab** activities should 'shift their focus and priorities from how to realise the interest of companies to how to realise the interest of the users'. Instead for merely becoming mechanisms for involving users in producer-driven product development, this next generation 'Living Lab V2.0' could and should also become **innovation accelerators for users and their communities** – mechanisms that encourage and enable motivated and creative individuals to swiftly create their solutions in collaboration with fellow designers, user communities and with interested businesses (Kommonen & Botero 2013). Kommonen & Potero (2013) proposed a set of activities these next generation living labs should do was proposed:

> ▸ create instruments that fund activities that are initiated and driven by strong user interests, without necessitating their alignment with particular corporate agendas or sponsorship,
> ▸ create methods, practices and

tools as well as shareable resources (such as open source software infrastructure and components, structured cumulative research data, and accessible data assets) to fortify such endeavours, for example, by drawing inspiration from established models used by numerous online and offline communities,

> ▸ be guaranteed to operate based on principles of public open innovation and free revealing of the outcomes arising from user-developer collaborations – both knowledge and software – and be receptive to the involvement of any stakeholders who have the potential to advance innovations into practical solutions. (Kommonen & Botero 2013.)

In some discourses, the user has already become a participant. Furthermore, transformative concepts of **citizenship** have emerged in climate, energy and smart city research, innovation and practice. For example, the concept of **energy citizenship** is claimed to offer a valuable conceptual tool for reflecting on a range of critical dimensions of the processes between communities, people and energy systems, and has served as a site for theorising the relations between individuals and the collectives of which they are part (Silvast & Valkenburg 2023). **Climate citizenship**, **environmental citizenship**, **digital citizenships** and **Smart City citizenship** have emerged in various discourses (see e.g. Björk & Shaw 2022; Calzada 2020).

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RDI Citizenship

The concepts presented above could be synthesised towards a new approach of RDI Citizenship at table 4.

APPROACH	PERSON	GOAL OF PARTICIPATION	PERSON IS...
Co-creation (historic; commercial)	Customer	Improve sales to customers	Serviced
User-centric and user-driven design	User	Design with and for users	Targeted
Open innovation and living labs	User	Enable design by users	Empowered
RDI Citizenship	Partner	Curiosity and joy in shared interest	Elevated

Table 4. A new approach of RDI Citizenship.

The RDI Citizenship could be used to bring together the dimensions of rights, duties and active participation of the participants to the participatory RDI processes. This could act as a site for theorising the relations of the academic RDI performers and those participating or acted upon. It could act as a parallel to the developments of citizenship concepts in other domains like climate and digital citizenships, creating a platform to anchor the social sciences insights from those domains into the participatory RDI discourse. More so, it would create a more just playground for the dialogue, when replacing the currently used loaded concepts of users and participants. This approach could be reached with following guidelines:

1.   When setting up participative RDI processes and spaces, considering the **various roles** each citizen/user/participants/partner can take in RDI processes, and the **dynamic nature** of this participation from the citizen point of view. Sometimes the living lab participant is an active 'RDI citizen' or 'fifth helix social entrepreneur' with ambition and insight to develop better local innovation for her specific need; and sometimes they can be a passive 'test user' or 'participant' merely just interested in new technologies or a financial reward for the test.

2.   When setting up participative RDI spaces and processes, consider taking deliberate steps **to go beyond the quadruple-helix model**, as that has been seen problematic from the participatory perspectives. Frameworks like **the penta-helix** or **the next generation living lab** could help to rethink the role of citizens/users, and create pragmatic tools for the living lab orchestrator to address better participation: Who should participate? Who could participate? Who is the living lab serving, funding, helping; and who are left out from helping, funding, services?

3.   Think of the role and capabilities of **orchestration**: Who are the orchestrators – facilitators of the collaboration? Think when are the orchestrators in an enabler-driven role (e.g. interacting with people to test new wellbeing solution), and when they are in a user-driven role (e.g. interacting with people to identify ideas for new innovations or providing and teaching the lab's tools for citizen innovators)? What kind of tools and methods are needed for each role? How do the required capabilities identified in literature – environment scanning, collaborative arrangement, and value integration – take place in a participatory and inclusive manner?

4.   Think of **accumulating open assets** that could empower and elevate the RDI citizens, and ways on how to promote the open asset accumulation. How to create a set of open assets for the users/citizens to innovate on? How to ensure that research data accumulates openly? How to manage these assets in the long term, and how to manage the intellectual property rights in a fair way? Next Generation Living Lab, Open Source and FabLab practices and movements can provide concepts and analogies for organising this activity in widening RDI networks.

4 Politics of Participation – the Imaginary Crisis

The high-level question of the **epistemic justice** in RDI is whose dreams we are dreaming, when we are thinking of creating new solutions and new knowledge: who chooses what kind of RDI we are performing; who chooses what are the societal challenges or opportunities towards which we should, could and would innovate or research; and who has set the narratives as well as the acceptable discussion windows – **Overton windows** – for choosing the acts, objectives and contents of RDI (Mackinac Center 2023). These societal goal-oriented assumptions are often implicit, and, more than often play on a subconscious level. However, they drive the decisions on who we participate with when conducting participatory RDI, and how, and why, we participate with them.

Presently, the notion of innovation is wedded to an **economic growth discourse**, although it has been a subject of political debate and contention for the majority of human history as described in Chapter 1. Many participatory activities working on innovations (and sustainability, scalability of such innovations) implicitly and often unintentionally anchor themselves to the economic growth discourse. Economic growth discourse has been contested in many areas of sustainability sciences. Also, implicit and false assumptions that 'start-ups are the source of innovations' and that the 'public sector is merely the user of innovations' (Mazzucato 2018) are often operationalised in the living lab discourse, leading to strengthening the neoliberal economic ideology and often missing the sweet spots and low hanging fruits of the creative processes.

Social innovation pioneer Geoff Mulgan (2020) claims that 'The world faces a deficit of social imagination' – **The Imaginary Crisis**: we, as the society, are not able to present alternatives to discuss and envision paths to parallel futures that are radically different, which is also seen in how we conduct RDI. New solutions and new knowledge are about change in the current state of play of the society. Innovations create new ways of being and interacting; new knowledge creates better understanding of how to arrange the social fabric. In Imagination unleashed – democratizing the knowledge economy (Mangabeira et al. 2019), the writers look at knowledge economy and claim that past industrial revolutions resulted in a profound restructuring of economic, political, and educational establishments, frequently in reaction to the highly unequal distribution of gains from the initial wave of transformation. For example, universal voting rights and widespread education, labour rights, anti-monopoly competition policies, and social welfare systems all aimed to alleviate the inequalities stemming from earlier industrial revolutions. The writers anticipate that a similar pattern is likely with the knowledge-driven revolution we are now witnessing and that "the knowledge economy does not have to be confined and contained, and that an alternative approach is in reach which democratizes it" (Mangabeira et al. 2019).

This imaginary crisis can also be seen in the mainstream vocabulary of participatory RDI and it is evident in the critical approaches of next generation living labs, co-research and for example in the concept of participation-washing presented above: 'Are the users driving and how open is open' has been asked in living lab critique for over a decade with not much change in the mainstream 'technocratic public-private-partnership models that fail to question the identities of strategic stakeholders … which is putting democracy at stake in smart cities' (Kommonen & Botero 2013; Calzada 2020).

There have been calls for 'bringing back the politics into innovation policy' for example in Finland (Lemola 2021), which ask the same question: who are we innovating for, and what kind of society do we want to build with the innovations.

Figure 7. European Union Mission Areas (according to European Commission 2021).

One way to address the societal changes anticipated by RDI is the concept of **mission-oriented innovation** (Mazzucato 2018), arguably one of the most visible topics in concurrent innovation policy discourse. It builds on the findings in innovation studies that all innovations have societal 'direction' in addition to 'growth speed'. The history of mission-oriented innovation is narrated through the strategies of research and innovation intensive public sector organisations in the United States like NASA and DARPA – The 'original RDI mission' being putting the man on the moon by NASA, a mission given to the US by the President Kennedy in his famous speech about moon race (Mazzucato 2018). Mission-oriented innovation revolves around specific, defined **missions** – goals jointly agreed to by the RDI performers and the rest of the society alike. Currently, missions are integrated in RDI policies at many levels, for example the European Commission's mission boards, and national mission programmes in most European Union member states, to local innovation challenges in cities.

In the European Union, Missions have been laid out, typically by the public sector, or through public-sector led collaborative processes, to the RDI performers, in order to let them create climate-neutral cities; to improve adaptation to climate change; to improve cancer cures and solutions; to restore European oceans and waters; and to bring back healthy soil to Europe. Substantial amount of RDI funding is aligned with and targeted to these mission goals (figure 7).

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From governance perspective, the framework of **Inclusive Innovation Policy** (Nesta 2018) approaches the RDI participation on the policy level through three dimensions:

- ▸ **The direction of innovation**: which groups in society benefit from innovation as consumers, and which groups bear the risks of innovation. Inclusive innovation policies actively deliberate whose needs are met by innovation and explore ways to better cater to marginalized social groups.

- ▸ **Participation in innovation**: diversity and inclusion amongst innovators, and the spread of innovative activity across sectors and regions. Inclusive innovation policies focus on initiatives that endorse broad participation in innovation and may in some cases prioritise equity over immediate economic advantage.

- ▸ **Governance of innovation**: the extent to which innovation policies reflect societal values. Inclusive innovation policies adopt a democratic and participatory approach for establishing priorities and governing the innovation process.

NEW SOLUTIONS AND NEW KNOWLEDGE ARE ABOUT CHANGE IN THE CURRENT STATE OF PLAY OF THE SOCIETY.

Co-curiosity

Joint RDI Missions

Shared, explicit **Joint Missions** could help guide the bottom-up participatory RDI processes towards common goals. They would lay out a common **purpose** for the RDI activities, and help elevate meaningfulness for the participation. The missions could act as an anchor and gravitation point which bring together like-minded individuals over the specific change or inquiry they would like to participate in. The missions of the participatory RDI spaces could be laid out when setting up the living labs, or they could be created together by the participants. Co-defining the missions of the participatory RDI process could help overcome the imaginary crisis and to open up such avenues of inquiry that would go beyond the implicit assumptions. The approach could be built upon the following guidelines:

1.   Choosing, or co-creating, explicit **missions** for the participatory RDI contexts – the high-level societal rationale why it matters to participate in the RDI challenges or solutions in question.

2.   Being **aware and explicit about the windows of acceptable dialogue (Overton windows)**, notably the implicit biases of both the mission context, as well as the acceptable participants, the roles that each participant would take in the dialogue – for example who are allowed to properly innovate and research.

3.   Embracing observations that we are experiencing an **imaginary crisis** in society and in academia.

The Inclusive Innovation Policy (Nesta 2018) could be used as a framework for local policy development and governance. Its three components could form **a policy approach for participatory RDI context** entailing **1) the direction of participatory RDI** – who benefits from the RDI and who bear the risks; **2) the participation in RDI** – diversity and inclusion amongst the RDI partners and participants and ensuring the participation reflects the intended direction; and **3) the governance of the participatory RDI context** defining the ways how all participants – from RDI performers to citizen scientists and neighbourhood innovators would collaboratively govern the common participatory RDI context.

5 Dimensions of Participation in RDI Partnership

Based on literature, a common aspect of different participatory RDI approaches is that they involve those who have experience, interest or expertise on the phenomenon under study or whose lives are affected by the RDI subject. The emphasis of stakeholder participation acknowledges the expertise of an individual concerning the needs, priorities, challenges and possibilities in the social and physical environment of their daily lives. The knowledge of everyday context and operating environment is recognised as a valuable expertise, which is combined with the researchers' academic skills.

The core principles in **participatory RDI partnership** is to enable the participation for stakeholders at all staged of the RDI process, with a focus on equity and reciprocal collaboration (Sipari et al. 2022a). The partnerships between researchers, project personnel and other stakeholders reposition the roles and responsibilities for those involved in RDI activities. Promoting equal participation through the RDI process needs a special focus from the very first steps of the process.

CORE ACTIVITIES	ELEMENTS	
Starting the research partnership	Spark for partnership Invitation to partnership Getting attuned to partnership Resources for and investment in partnership	Ethical and developmental evaluation in collaboration at every step
Building a research team	Agreeing on the practicalities of working together Promoting equal participation Co-development of partnership goals and missions Identifying collective skills and learning needs	
Reciprocal co-planning of research	Defining a research topic and objective together Preparing a research plan together	
Co-production of a new research data	Collecting material together Multi-perspective data analysis and joint interpretation of results	
Utilisation of research data in everyday life	Diverse communication Discussion of the practical significance of the results	

Table 5. Core activities and elements in the participatory research partnership process (Sipari et al. 2022a).

The participatory RDI partnership underlines **the importance of the preparatory phase in RDI activities.** The first steps in the RDI process focus on starting the partnership, inviting transdisciplinary team members to partner in RDI activities, building a team and co-creating practices that enable equity and meaningful collaboration. Table 5 describes the five core activities and main elements in a collaboration-based research process (Sipari et al. 2022a). The process is not, however, linear but develops in partnership with stakeholders requiring ongoing developmental and ethical evaluation (Sipari et al. 2022a).

Stakeholders' engagement in RDI process as equal partners realises their right to participate in matters that have influence on their daily lives. The partnership enables a rich understanding of the phenomena under study and the

Participatory RDI partnership can be applied to different strategies and approaches with a value base of inclusive collaboration and equal participation. Participatory RDI partnership is not a linear process, but rather a dynamic and evolving collaboration with partners. Attention should be paid to identifying and combining different expertise and competences in the partnership-based collaboration.

identification of issues that are relevant in everyday life. Linking the gap between research and practice, the RDI based on partnership has the potential to enhance the quality, meaningfulness, relevance, applicability and credibility of the results, as well as the ethical conduct of RDI (Domecq et al. 2014; Hoekstra et al. 2020). In participatory RDI partnership, the dissemination and implementation of results is realised in the process and by all participants (Sipari et all. 2022b).

Participatory RDI partnerships enable collective learning, knowledge-building and development of social capital. Thus, collaboration-based RDI creates a space for lifelong learning for various stakeholders (Nind 2016; Clarke et al. 2019) and offers possibilities for participant and community empowerment (Buffel 2018; Sipari et all. 2022b). Fostering learning through the RDI process requires openness to learning from one

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another, and intertwining diverse and complementing expertise and know-how are essential in participatory RDI partnership. Identifying and valuing different expertise, collective learning and the will to reform and renew together creates shared value. This promotes the utilisation of new ideas, experiences, and enriching interaction. In participatory RDI partnership the appreciation of individuals' unique expertise and joy of doing, developing and learning together promotes wellbeing and feeling of togetherness in making a positive change. (Sipari et al. 2022b.)
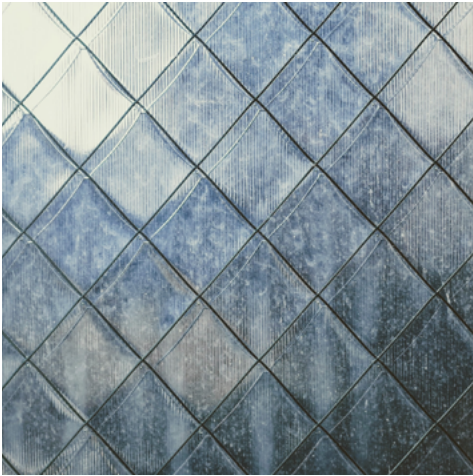
The identification of meaningful and need-based research and development topics together with stakeholders attach the focus of RDI partnerships in everyday circumstances and practices. This focus for the RDI process pushes to co-create and modify the RDI process into the daily life circumstances and to apply inclusive RDI activities in collaboration with individuals, communities, companies, teachers, students or researchers. Digital tools and new transformative technologies can be used as enablers of accessibility, collective learning and enhanced transparency. (Sipari et al. 2022a: Sipari et al. 2022b.)

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INCLUSIVE COLLABORATION NEEDS ONGOING EVALUATION THAT IS USED TO DEVELOP AND EMPOWER PARTICIPATORY RDI PARTNERSHIP AND TO SECURE THE ACHIEVEMENT OF ESTABLISHED GOALS.

Participatory RDI Partnership Journey in Metropolia UAS

Metropolia aims to build a collaborative RDI culture across the organisation and networks, improve access and competence to participatory RDI partnership for a wider range of stakeholders, and embed participation and accessible technology more comprehensively in RDI projects. Collaborative skills and the ability to co-construct new understanding, learning and solutions together by integrating different expertise with the resources and conditions at stake are valuable competencies that support the creation of meaningful and impactful partnerships in RDI. By adopting a holistic approach to applied RDI, Metropolia UAS aims to actively enable collaboration between individuals, communities and organisations in the labour markets and civil society. Metropolia also aims to facilitate the co-production of new knowledge, tools and innovative products and services that better address diverse needs, meaningful activities and strengthen sustainable wellbeing in the daily life.

Participatory RDI partnership is a value-based culture of collaboration that is consciously built through partner interactions. It involves a set of core elements that form a unique framework, which includes principles, practices, and dimensions of action (illustrated in figure 8). Participatory RDI partnership aligns with the functional values of Metropolia, which are depicted in the background of the core elements.

Participatory RDI Partnership

Procedure:
Utilising diverse expertise

With a human touch

With competence renewal

Safe atmosphere

Trust

Honesty

Appreciation

Identification and combination of skills and resources

Policy:
Equality

Mission:
Sustainable wellbeing

Complex phenomena

Holistic understanding

Produces empowerment and well-being for its creators in collaboration

With an orientation on solution

Towards a sustainable future

Scope of action:
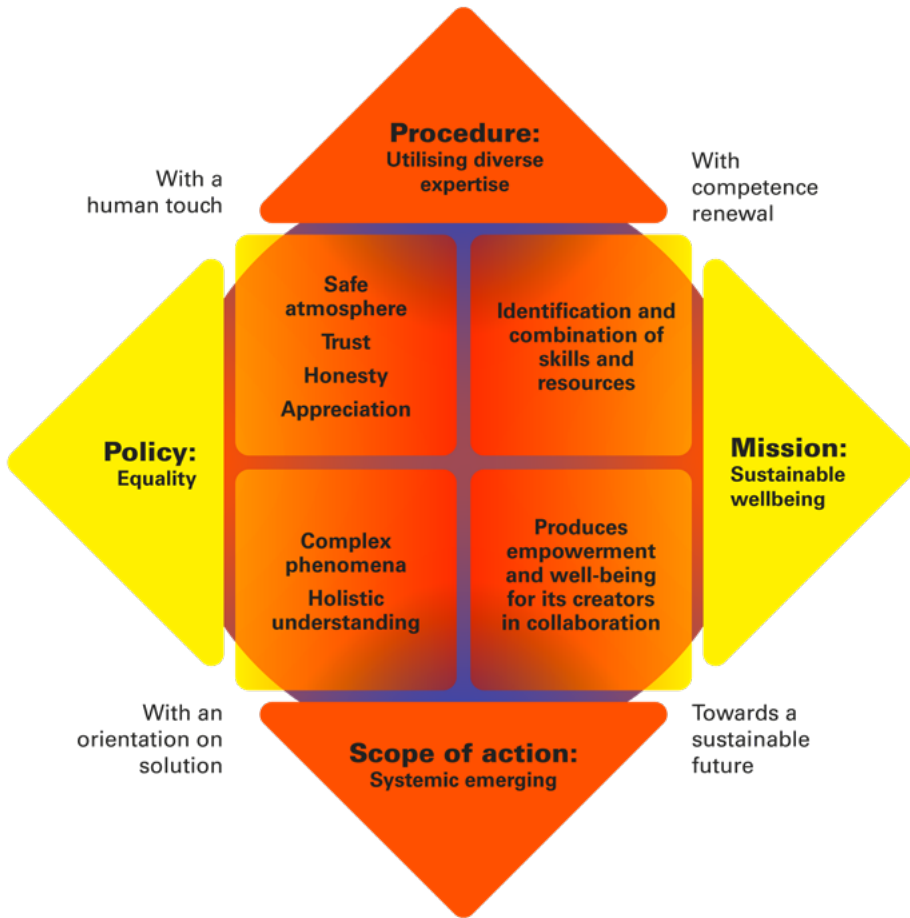Systemic emerging

Figure 8. Collaboration in participatory RDI-partnership framework in Metropolia UAS.

Policy: Equality

Participatory RDI partnership is based on equal and reciprocal participation among all actors who are affected by research topics or activities. The participation of each actor is facilitated by taking into account individual capacity and ensuring accessibility and inclusivity. This approach creates a safe atmosphere that encourages trust, honesty and appreciation of everyone's unique expertise and experiences. Reciprocity is shown through enthusiasm, openness and belief in the power of collaborative action, as well as sharing of expertise. It involves belonging to a community that is meaningful to oneself, where knowledge and actions are shaped together towards a shared goal for sustainable well-being.

Metropolia UAS strategy leans on value basis: with a human touch.

Procedure: Utilising of Diverse Competences

Utilising diverse competences as a way of working involves identifying and combining different expertise and resources of the actors involved. Roles, responsibilities, and tasks are agreed upon together. When combining diverse competences, the shared need for RDI activities is recognised, the goal is clarified, and the meanings of actions and matters are defined together. At the same time, the commitment, collaboration and shared agency of the actors are strengthened, resulting in the development of ecosystems and networks around a collectively important topic. This approach utilises the strengthening of communal expertise.

Metropolia UAS strategy leans on value basis: with competence renewal.

Scope of Action: Systemic Emerging

Participatory RDI partnership expresses systemic change and describes the development that arises from interaction between actors. The approach enables RDI activities to be applied to complex phenomena, allowing for a holistic understanding and perception. Systemic development is a socially constructed entity characterised by dynamism. This can involve agile cycles and long-term action in a state of constant change, which also means that the evaluation of change should be continuous and diverse in nature. In addition to new knowledge, solutions, and innovations, the result is shared value and added value for actors towards the goal for sustainable wellbeing.

Metropolia UAS strategy leans on value basis: with an orientation on solution.

Mission: Sustainable Wellbeing

Participatory RDI partnership fosters empowerment and wellbeing for the participating actors through meaningful collaboration. From individual's perspective this is crystallised as 'I am valuable and useful in a community that is meaningful to me, working towards a common goal of sustainable well-being, and constantly learning together with others in a systemic change.' Participatory RDI Partnership enables actors to influence and be engaged in important topics that promote meaningful change and knowledge in their daily lives. Responsibility for a sustainable and good future is built in collaboration, so it is not a burden for the individual but rather energising continuous and collective learning.

Metropolia UAS strategy leans on value basis: towards sustainable future.

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Emerging from Metropolia's Futures Arena: Co-curiosity

In a participatory RDI partnership, the key lies in collectively addressing meaningful and significant RDI topics with systemic approach, and utilising the expertise of each individual to achieve something beneficial. In order to foster a culture of participatory RDI, it is important to pay attention to the spaces and opportunities offered to multifaceted networks. These spaces and opportunities encourage the exchange of ideas and contribute to strengthening reciprocity and the positive flow of knowledge and creativity.

Metropolia UAS arranged a Futures Arena event in May 2023 for the second time that combined transdisciplinary and international expertise to create insights for the future. The event effectively embodied participatory RDI partnership in action. Futures Arena provided a participatory space where new knowledge was shared and created, future possibilities were imagined together, and the cultivation of collaborative seeds were made possible. The event's interactive program, featuring co-development workshops, dialogic presentations and panels, fostered an understanding of the significance of fruitful diversity in perspectives, shared interest and willingness to learn in collaboration.

The results of the event further reinforced the understanding that Participatory RDI partnership is fuelled by curiosity as well as the joy of collaboratively working towards a mutual and meaningful goal. As a synthesis of the event's outcomes, a new concept emerged: co-curiosity.

6 Transformation to Co-curiosity

The purpose of this publication was to make better sense of matters: to create a common vocabulary and conceptual baseline for dialogue for the RDI experts and enthusiasts who are engaging in the design, implementation and evaluation of collaborative RDI spaces and processes. While there is an abundance of concepts to mobilise to this dialogue, what we lacked was a high-level conceptual framework that would bring together and cover the context of participatory RDI in Metropolia UAS.

Also importantly, to overcome the imaginary crisis, new conceptual tools are needed – such that brings together relevant aspects of the participatory RDI from various traditions in a more precise and comprehensive way than what is available in the current co-jungle. The meaning of many of the co-notions has been and is changing (table 6), and they may carry unwanted connotations for many participants.

	HISTORY OF CONCEPT	CHALLENGE, WHEN USED IN PARTICIPATORY RDI
CO-DESIGN	Participatory design, Living labs	Explicitly a design method; Assumes a design target (an artifact) jointly worked on
CO-CREATION	Business, customer interaction	Semantic overload; fuzziness; commercial business background connotations
CO-INNOVATION	Innovation studies	Not widely used; focuses on innovation only
CO-RESEARCH	Health and wellbeing studies	Focuses on research only

Table 6. History and challenges of co-concepts.

A new concept of co-curiosity anchors the development of participatory RDI more directly to the values, goals, rights and motivations of the RDI performers and their collaborators. Co-curiosity opens a new mode of thinking about the participation in RDI processes. It covers widely all the research, development, design, innovation and education activities conducted in a university. Co-curiosity expands the conceptual space beyond the technical innovation and research processes, and helps transform the participatory RDI approach, both in the higher narrative levels, as well as in details like the performance metrics (table 7).

Co-curiosity

APPROACH	PERSON	PERSON IS...	GOAL OF PARTICIPATION	WHERE THE PURPOSE ORIGINATES
Co-creation (historic; commercial)	Customer	Serviced	Improve sales to customers	The company's sales targets
User-centric and user-driven design	User	Targeted	Design with and for users	Improving a product or a service
Open innovation and living labs	User	Empowered	Enable design by users	The users' needs
Co-Curiosity	RDI Citizen	Elevated	Curiosity and joy in shared interest	Jointly defined shared mission

Table 7. Co-curiosity as a new approach in collaborative inquiry.

Curiosity is a quality observed in humans and animals, which is related to inquisitive thinking such as exploration, investigation, and learning. The term has a long history: Cicero referred to curiosity as 'innate love of learning and of knowledge without the lure of any profit' and Aristotle wrote that 'all men by nature desire to know … not for any utilitarian end.' (Markey & Loewenstein 2014.)

Co-curiosity describes the collaborative inquiry into new solutions and new knowledge of a joint interest. Co-curiosity is the desire to acquire knowledge and skill through multifaceted exploration, investigation and learning in a shared agency.

Co-curiosity

How to Elevate Co-curiosity?

Self-determination theory (Ryan & Deci 2000) is a theory of human motivation and personality that concerns persons' innate growth tendencies and psychological needs. It posits that three basic psychological needs motivate self-initiated behaviour: Autonomy, Competence and Relatedness. Later theorists have re-formulated these three needs also as Autonomy, Mastery and Purpose (Pink 2011): Autonomy is the feeling of being autonomous, self-directed, having a choice and willingly supporting one's behaviour; Competence is the experience of mastery and being effective in one's activity, being able to learn and receiving feedback, and Relatedness or Purpose is the need to feel connected and belongingness with other, the knowing why I am doing something.

Autonomy in participatory RDI consists of the feeling of being self-directed, being able to have a say and choice in all of the stages of the RDI process. A platform for enabling autonomy could be established through the **RDI Justice** approach: initiating equal right to participate, equal right to knowledge production, equal right to be interested in a specific issue at hand, equal right to select topics for the co-research or co-design, and equal right to innovate solutions.

Mastery means properly empowering all of the participants for the collaborative inquiry. Thinking tools of Next Generation Living Labs – accumulating open assets, shared learning environments, improve the experience of mastery. The intersectional approaches to equity and justice would level the playing field for everyone: **RDI Citizenship** could be an empowering concept for participants: everyone has rights and duties towards the shared RDI process, and everyone has rights to pursue and reach competence in the issue of interest.

Purpose means the alignment of values and sense of belongingness with others. Being aware and explicit about the anticipated impact of the research or innovation, through tools like **Joint Missions**, and opening up the imagination space by
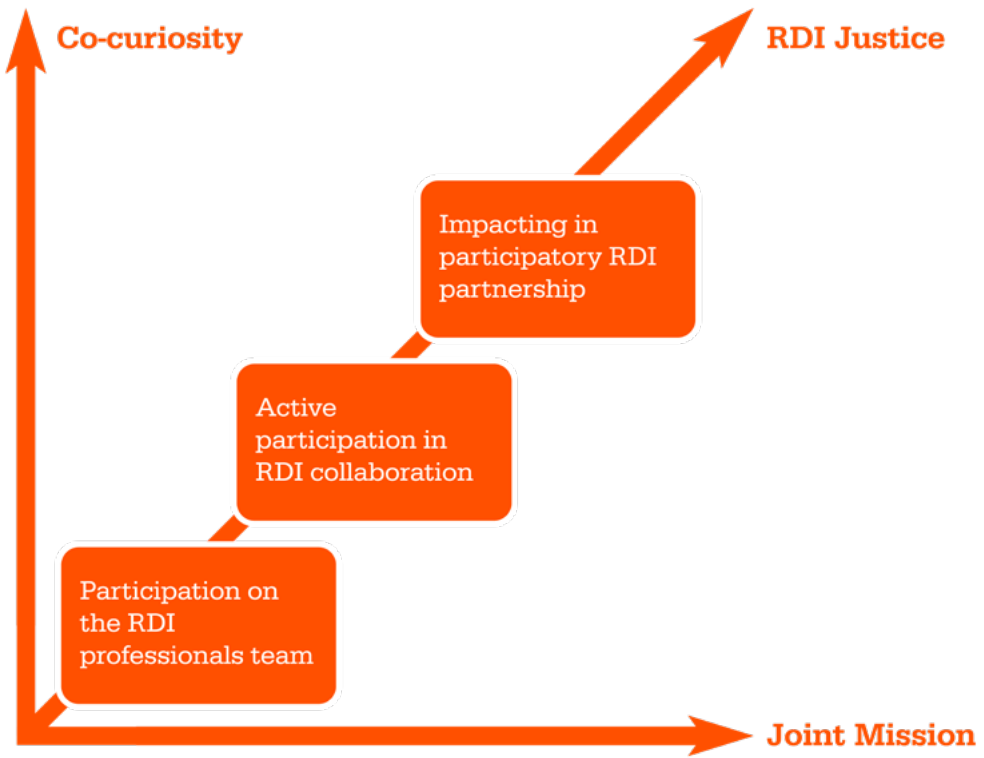
Co-curiosity

Figure 9. Change in the degree of participation in collaboration-based RDI.

leveraging the critique of the imaginary crisis build the feeling of knowing Why I am doing something. This most often would require questioning the societal status quos, and empowering one's thinking towards questions of what good life is. For a participatory RDI planner, this would require thorough analysis of many implicit assumptions of how the society and economy work.

In the context of co-curiosity, individual empowerment evolves into collective empowerment. In this case, change in the degree of participation transforms into greater impact in participatory RDI partnership. This transformation harnesses newfound resources from collaborative RDI, channelling them towards the joint mission in partnership. Through this synergy collaboration can bring **RDI Joy** in the pursuit of good life and future (figure 9).

Joy Is the Spark That Lights Co-curiosity

One Theory of Joy (Arnett 2023) defines joy by the elation of right relation, i.e., an intense and temporary feeling of increased positive emotions as a result of a just right fit between our identity and the moment we are experiencing. According to this theory, the key for RDI Joy would be to design the enablers and the drivers of participatory RDI settings and spaces in a way that this elation would cherish. Vast psychological literature exists on theories of happiness which are outside the scope of this publication. As one highlight, the recurring observation is that people are generally happiest in moments when they feel most connected to others. RDI Joy sparks up in participatory settings of connectedness, where participants feel autonomy, mastery and purpose. In a successful, effective, meaningful, happy RDI partnership, the Co-Curiosity and shared Joy – the desire for inquiry – are highly intertwined. They emerge from a Joint Mission, and they are driven and enabled by Justice (figure 10).
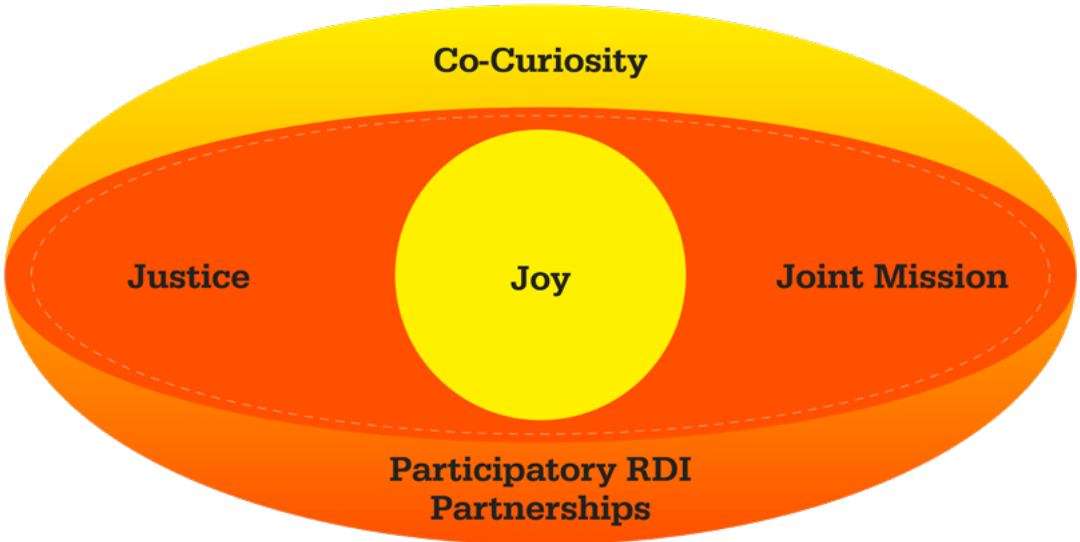
Figure 10. Elevating elements in co-curiosity for participatory RDI partnership culture.

Roadmap to Co-curiosity

The development of participatory RDI partnership culture in Metropolia UAS has resulted in a systemic approach with practical key areas for a new emerging concept of co-curiosity in RDI activities. The literature review and suggestions above provide the first seeds for action areas for any higher education institute on its transformation towards co-curiosity. The following questions could act as a guiding light for building a further roadmap or action plan towards this aim:

1.   What new competences and skills would co-curiosity require? What new initiatives and aspects should be brought in if the aim is to master the desire and joy of participatory RDI?

2.   How to assess co-curiosity and its constituents? As clearly seen from the mission-driven RDI discourse, such key performance indicator set-ups where only the number of new innovations or new start-ups are measured are a thing of the past. How to measure the performance in RDI purpose, or in RDI citizenship?

3.   What kind of cultural transitions and transformations are needed? Donella Meadows' famous 10 Leverage Points: Places to Intervene in a system emphasises that the most important tools to change are the rules, concepts, goals and dialogue used. How to embed RDI Joy into the organisational culture in such a way that it sticks, that it feels desirable for everyone, and that it expands up to the governance and management systems?

4.   What kind of new structures are needed to set up and orchestrate the elevated, co-curious participation? How would a Living Lab based on co-curiosity and joy look like? Would it be called a next generation living lab, or would it instead be a living playground or a living community garden?

Embracing Tomorrow: Initiating a Journey into the Future

The uniqueness of participatory RDI partnership lies in the equitable collaboration, igniting co-curiosity towards the current needs and future possibilities. Metropolia UAS as well as other higher education institutions have a significant role to act as a nexus enabling the co-curiosity of a diverse RDI network.

Simultaneously, in the collaboration between the university, the job market, and citizens, emerging living labs become anchored in everyday life and thrive on the journey of communal learning. This comprehensive approach reflects a future-oriented vision of Metropolia UAS, where networks of knowledge and innovation enrich daily life and collectively address societal challenges. Good future is made together.

Co-curiosity

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Photographs

Metropolia University of Applied Sciences (UAS) is a multidisciplinary higher education institution in Helsinki, Finland with over 17,000 students in the fields of Business, Culture, Health Care and Social Services, and Technology.

Metropolia's strategy aims to transform the world and society by being a bold reformer and active builder of a sustainable future. To achieve the strategic intent, it has a unique organisational structure for transdisciplinary RDI with phenomenon-based innovation hubs and thus the strategy is implemented collaboratively.

Its mission to conduct applied RDI activities – to solve practical problems, renew and improve practices and create new product development, or service innovations – is laid out in Finnish legislation.

Metropolia