

Building Good Together, Step by Step: Co-Participatory Design for Information Access

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Abstract. Research on information access environments “for good” is prominent across various disciplines. Yet, it remains unclear how much of this work translates into real-world outcomes, the kind of impact captured by broader societal priorities such as the Sustainable Development Goals (SDGs), which no field can advance on domain expertise alone. In this position paper, we argue that the field faces a persistent gap between aspiration and practice and that closing it does not mean waiting for perfect breakthroughs. Researchers have already laid a foundation that can support tangible improvements by shaping how we conduct our experiments and studies. We advocate for the steady, incremental adoption of what we already know works, pursued not on behalf of users but *with* them, through co-participatory design done right. These “baby steps” are how the community moves from discussing information access environments for good to systematically building and deploying them.

Keywords: information access · recommenders · sustainable goals.

1 The Time to Act Is Now

Recommender systems and other information access systems are core infrastructures in today’s digital ecosystem, shaping what people discover, learn, consume, and engage with. Still, reaching everybody is not the same as *serving* everybody. Over the last few years, this tension has driven a slow but real attention shift toward information access environments that have received little of it, most notably, under-represented groups and low-resource settings. Consider the Low Resource Environments track at ACM SIGIR [11], the IR for Good track at ECIR [32], the Web4Good track at WWW [27], and workshops at Information Retrieval/Recommender Systems venues focused on the social role and impact of information access systems, including IR4U2, RecSoGood, and UMAP4Good. What these initiatives have in common is the pursuit of “good” information access. Yet we must ask whether we are on the right track and what methods the community needs to get there.

Establishing *what is good*, however, is a broad and complex issue, one that is not just limited to the system side. Recent work started identifying prominent use cases and recurring areas of attention when it comes to information access “for good” [25, 39, 40]. Nonetheless, good is as ineffable as relevance [7], with an intrinsic subjective connotation. What counts as good depends on who is asked, in what context, and toward what ends, raising questions that researchers, practitioners, and system designers cannot answer alone. As Said et al. [41] recently argued, the community must define a better problem: rather than continuing to prioritize marginal gains in predictive accuracy, we should focus on the value recommender and other information access systems create in the real world—value often articulated through broader societal priorities [e.g. 14, 17, 18, 40] such as the Sustainable Development Goals (SDGs) [29].

Contributing toward the SDGs requires more than domain expertise in information access; these are not objectives that better ranking or retrieval can settle on their own. Thus, it is crucial to involve those affected by information access systems, not only as judges of how good or beneficial such systems actually are, but as active participants in defining what good and benefit mean in the first place. While it is arguably easy to agree that we have the willingness—and responsibility—as researchers to work toward these goals, it is not necessarily straightforward to know how to do it.

In this work, we advocate for steadily putting what we already know into practice to incrementally improve outcomes for users and society. Following Trippas et al. [46, p.37], Spina [45], and Ekstrand et al. [16], we argue that participatory design and co-design bring affected communities’ values into information-access research and evaluation. This practical agenda complements the work by Mitra [30, 31], who calls for a more fundamental reflection on our practice from a critical frame. We discuss the co-design approach for information access and provide examples of how this approach could inform research in practice.

Positionality Statement. The authors are computer and information science academics in recommender systems, information retrieval, and human-computer interaction. Our views are shaped by our experience in participatory and interdisciplinary research, as well as lived experiences as privileged immigrants.

2 Humans in the Centre with Co-Design at the Core

In the quest to put humans in the centre, we identify co-design as the approach to take in order to make sure information access systems are truly good for their immediate users (those consuming information) and other stakeholders at large (including item providers along with upstream, downstream, system, and third-party stakeholders [9]).

Systems should be built *with* those affected, not merely for them [16]—as co-designers, they can act as informants, design partners, and evaluators [15]. This means treating stakeholders not as subjects to be studied but as partners with agency, expertise, and legitimate claims over the systems that shape their lives [23, 35] and therefore making the overall process accessible [43, 44] and demo-

cratic [26]. Relevant stakeholders are involved from the beginning, as informants during usage research to better understand their needs, then as design partners during ideation, and as evaluators to assess how truly good the designed systems are. In so doing, their interpretation of good is infused in the system from the beginning.

The design and deployment of recommender and other information access systems is inherently a multi-stakeholder problem, with objectives that often compete [9]. That difficulty is not an excuse to sidestep it: engaging everyone involved is precisely what makes the difference between systems that merely function and systems that genuinely benefit the people they reach. Different stakeholders will bring their perspectives, concerns and fears as well as expectations and preferences, making it possible to devise appropriate metrics to suit their definition of good. At the same time, listening to all these different voices will contribute to inclusivity and diversity. One of the challenges of successful co-design is the definition of activities to engage co-designers so as to trigger their creativity while making sure they can all effectively contribute to the team effort and that their contribution is properly acknowledged [51]. Activities and procedures are tailored to specific tasks and context and could be shared across research groups working towards the design of good information access systems, following the well-known Cranfield paradigm [12, 49] and expanding it beyond evaluation to include the full design process and drastically moving from system to humans in the centre.

3 Baby Steps Toward Sustainable Development Goals

Figure 1 shows ideas on how co-design can be embedded in information access research. With co-design at its core, an iterative, circular approach maximizes direct engagement with relevant stakeholders across our research. There is a wide variety of stakeholders to consider: members from underrepresented groups, their guardians and carers, practitioners, and researchers. The wide range of expertise needed makes the research inherently multidisciplinary.

Protocols & Code of Ethics. In addition to the expertise brought from disciplines like social science and education, there are resources that can guide information access researchers in establishing safe, respectful, and meaningful ways to engage in research with underrepresented groups. For instance, Indigenous Knowledge Systems Labs [28] released a toolkit for establishing protocols for non-Indigenous peoples engaging with Indigenous knowledge [24, 28]. Resources such as the Co-design with Kids Toolkit [21] and the Toolkit for Digital Childhoods Research [4] provide tangible guidelines for how to conduct co-design research with children.

Tasks and Inputs. Co-design can directly inform the characterization of tasks and user inputs and needs. E.g., using mixed methods approaches can be effective to understand new tasks or user behaviour [19]. As is often the case, underrepresented groups are typically invisible in existing Recommender Systems datasets and Information Retrieval test collections [47]. Co-design approaches can be used

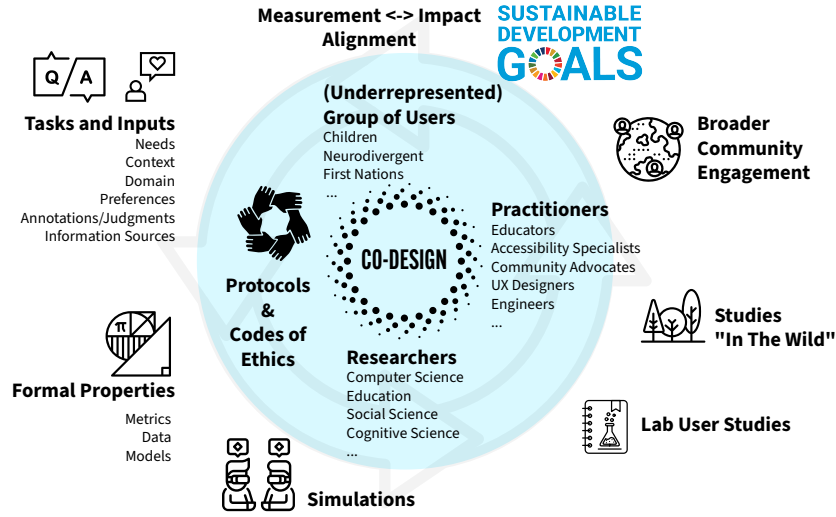


Fig. 1. Co-design approaches to move forward toward the Sustainable Development Goals (SDGs) in information access.

not only to create new resources, but also to identify relevant subsets in existing datasets [37, 48].

Formal Properties. What does a responsible recommender system for a specific group look like? The approach used by Coghlan et al. [13] using ethical models to characterize search engines could be used to study the properties of recommender systems. Co-design can inform axiomatic analysis [2, 3, 36], i.e., help identify formal computable properties that stakeholders may find important for their tasks and contexts: e.g., what does “usefulness” mean in the context of children’s information access [10]?

From Simulations to Studies in the Wild. Co-design improves the ecological validity of our experiments. The contextual knowledge of the stakeholders can help researchers move from simulations to modeling realistic practices and identify outcomes that matter to affected communities [20]. More importantly, this also reduces the risk of producing findings that are technically valid but poorly aligned with stakeholders’ needs.

Broader Community Engagement and Impact. As stakeholders get more involved in the co-design process, they will gain greater agency over its outcomes and benefits. Therefore, they will start acting as natural ambassadors who disseminate findings through diverse channels.

Altogether, by applying co-design approaches to characterize and address research problems in information access, we can align our research to the SDGs.

4 Practical Challenges

While co-participatory design can help align research with stakeholder viewpoints, needs, and values, its implementation is rarely straightforward. Practical barriers include additional time and resources required to support sustained engagement, challenges in recruiting diverse yet representative voices, accessibility, and the power asymmetries that can exist between researchers, practitioners, platform and service providers, policy makers, and community members [5, 42]. The goal then should not be to reach artificial consensus, but to appropriately scope and learn from areas of convergence and disagreement and to make explicit whose interests are prioritized when trade-offs arise. Transparent documentation of decision-making, articulation of trade-offs, and iterative negotiation can prompt participation that moves beyond token consultation towards meaningfully influencing research and real-world deployments [34]. These challenges are further reflected in recent recommender systems research, which highlights the difficulty of moving beyond treating affected communities as sources of feedback to enabling meaningful participation in the conceptualization, design, evaluation, and governance of algorithmic systems [16, 35, 38].⁴

A related challenge concerns how success is perceived and measured. When it comes to recommender systems that pursue “good”, success cannot be equated only with research outputs or the technological artifacts resulting from designing with those impacted by the information access systems. Whether diverse perspectives were meaningfully represented or the process resulted in visible influence on actions also contributes to success (or lack thereof), extending beyond traditional (recommender system) metrics and better reflecting the needs of multiple stakeholders [1, 16]. At the same time, participatory approaches may overemphasize individual perspectives as proxies for societal good, potentially overlooking broader societal, environmental, and long-term considerations [6]. These limitations in no way diminish the value of participatory approaches, but do bring attention to the need to complement stakeholder input with reflection on wider and long-lasting impacts and on how technologies are used in real world settings [8]. Recent calls for more human-centred information retrieval and recommendation systems similarly argue that system objectives should extend beyond optimization alone and more explicitly account for the needs, experiences, and values of the communities they affect [20, 33, 46].

Progress also depends upon research communities, funding bodies, and publication venues better recognizing and valuing outcomes such as community empowerment along with more traditional measures of research impact [5], although achieving such recognition remains an ongoing challenge.

⁴ For a broader discussion of participatory design practices, challenges, and lessons learned across domains, see Wacnik et al. [50] and Hansen et al. [22].

5 Concluding Remarks

Defining “good” is complex, but that is not a reason for inaction. As researchers and practitioners, we should act on what we already know while sustaining the human-centred, co-designed practices that bring those affected into shaping these systems, and continuing to ask whose needs are served and whose voices are still missing. This is not work Recommender Systems and Information Retrieval can tackle alone: it means reaching beyond information access expertise to the domains, disciplines, and communities that these systems ultimately affect. Our baby steps are deliberately small, but move in a clear direction. If we are willing to take them, even small moves can carry the field toward systems that not only reach, but benefit all.

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