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What we already know about corporate digital responsibility in IS research: A review and conceptualization of potential CDR activities

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Abstract

Advances in new technologies affect private and professional lives alike, posing new opportunities and threats for companies, consumers, and society. In this context, the concept of corporate digital responsibility (CDR) gains traction enabling technologies benefitting humanity while exceeding mere technology advancements. Yet, theory and practice still lack a systematic in-depth understanding of the concept's scope up to concrete activities. The aim of this paper is to enable a more concrete and deeper understanding of the concept scope by drawing on available knowledge in the thematically related discipline of information systems (IS) in general and electronic markets in particular. The study employs an extended systematic literature review to aggregate prior knowledge in this research domain relatable to the concept of CDR and to develop an in-depth classification of potential CDR activities inductively according to ten dimensions, corresponding sub-dimensions, and respective fields of action. This contributes to the overarching goal to develop the conceptualization of CDR and to anchor the concept in the context of electronic markets, thereby fostering human and social value creation.

Keywords Corporate digital responsibility · Conceptualization · Extended systematic literature review · Grounded theory literature-review method · Electronic markets · Information systems research

JEL classification L00 · O30

Introduction

Digitalization shapes our private and professional lives as it paves the way for a plethora of newly developed or adapted digital products, services, markets, and technologies (Spiekermann-Hoff et al. 2021). These goods, services, markets, and technologies range from artificial intelligence (AI) applications to enhanced social media platforms, ubiquitous assistance, and more sophisticated information and communication technologies (ICT). Electronic markets and their networked business build on these developments, their products, services, and technologies posing

new opportunities and allowing for altered value creation. Nevertheless, these advancements also induce ethical questions and threats for humanity (e.g., Alt 2022; Beck et al. 2022). Consequently, managers need to exploit the chances and address the challenges accompanying electronic markets adequately to assure the success and continued existence of the company and technology benefitting humanity (e.g., Spiekermann and Winkler 2020; Trier et al. 2023) beyond economic goals or technology advancements (e.g., Kneissel et al. 2023; Spiekermann et al. 2022). Thus, it is important to comprehend potential consequences, negative as well as positive, to ensure a responsible development and deployment (Trier et al. 2023).

Following, research and practice need a comprehensive understanding of emerging corporate responsibilities in the context of electronic markets. Yet, the understanding on how to ensure a responsible and ethically sound application of digital technologies and dissemination of digital products and services in this context is disconnected. Just lately, the concept of *corporate digital responsibility* (CDR)

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is gaining traction, providing a more holistic approach to digital responsibilities. The aim of CDR is to ensure a comprehensive understanding on how to use the opportunities as well as address the related risks of digitalization, in this way contributing to human and social value creation and fostering behavior that is aligned with ethical norms and values. Such a comprehensive concept better reflects reality where responsibilities do not occur isolated but rather in an interconnected way with potential influences on one another.

The concept of CDR is increasingly receiving attention in research despite its origins in a rather practice-driven debate (Lobschat et al. 2021). We can observe a debate on the definition of the concept and related responsibilities (e.g., Herden et al. 2021; Lobschat et al. 2021; Mueller 2022) and situating it in the broader context of digital responsibility (i.e., also covering responsibility on the personal and societal level) (e.g., Trier et al. 2023). Besides, endeavors developed (e.g., Mihale-Wilson et al. 2022; Mueller 2022) that synthesize the current landscape of research dedicated to or underlying CDR to enhance the understanding of the concept and to pave the way for future research. Furthermore, prior research already adapted the concept to different (industrial) settings (e.g., Etter et al. 2019; Liyanaarachchi et al. 2021) and as an application of AI governance (e.g., Elliott et al. 2021), besides assessing the concept from an empirical angle (e.g., Carl 2022; Carl, Mihale-Wilson, et al. 2023a, 2023b; Mihale-Wilson et al. 2021). However, research and practice still have a rather superficial understanding of the scope and conceptualization of CDR, calling for further research (e.g., Mihale-Wilson et al. 2022). This research aims to diminish this gap and to ensure a more comprehensive understanding on how to accept more responsibilities voluntarily in a digital setting, also advancing the current conceptualization of CDR. To this end, this study answers the following research question:

Research question (RQ): What is the state of research relatable to the concept of CDR and how can it be further conceptualized?

Several research disciplines contribute to the concept of CDR (e.g., information systems (IS), marketing, computer science, and business ethics). However, relatable research within each discipline is highly scattered. To provide a well-grounded understanding of prior research relatable to the emerging concept of CDR, this study focuses on one discipline while emphasizing one specific field within this discipline—IS research in general and particularly focusing on electronic markets research. There is a substantial fit between the objectives of CDR and (prior) IS research (Greene et al. 2023; Mihale-Wilson et al. 2022): corporate responsibilities in general (e.g., related to corporate social responsibility (CSR), sustainability), ethical considerations,

and how to deal with challenges and risks that occur in the digital setting are not new to IS nor electronic markets research, therefore being capable of substantially contributing to the understanding of responsibility in the digital sphere (Trier et al. 2023). Above all, IS research has its tradition at the intersection of technology and business, not just focusing on technological advancements but also their adoption and implications. In this way, IS research can contribute a view on CDR at the intersection of technology and research and its implications, therefore having the potential of being a core contributing discipline to the CDR debate (e.g., Mihale-Wilson et al. 2022). Research on electronic markets is one sub-discipline of IS research: “[Electronic markets research] deals with the variety of social, economic and societal influences that information technology (IT) exerts on the interaction processes between companies and their customers” (Nahr and Heikkilä 2022, p. 1257). The nature of electronic markets and the associated networked business at the intersection between companies and consumers represents an important application field for corporate responsibility in the digital setting. Still, research on CDR in the context of electronic markets is currently missing, despite the inherent fit and challenges that the concept of CDR aims to address. Rather, as of now, individual aspects of CDR like transparency, privacy, and access are well established in IS and electronic markets research since decades (e.g., Bélanger and Crossler 2011; Hsieh et al. 2008); however, they are at the moment scattered. In this vein, this study synthesizes prior research that can nowadays be linked to the newly emerging concept of CDR to enable a more concrete, structured, comprehensive, and deeper understanding of the concept scope by drawing on earlier research from the field of IS and particularly electronic markets research. To ensure a sound foundation for further (potentially interdisciplinary) research on CDR, this study had to focus on a distinct discipline. Therefore, the results have the inherent ability to inform and guide future research on the topic of CDR while anchoring the topic in the context of electronic markets as well as IS research in general. In this vein, firstly, research gains a more holistic understanding of corporate responsibilities in the digital setting compared to research on relatable subjects that was more isolated and scattered in the past. Secondly, aggregating prior research and developing a nuanced and structured understanding of the scope of CDR is crucial for moving the conceptualization of CDR further. Consequently, this study supports human and social value creation by sharpening the understanding of more comprehensive corporate responsibilities in the digital context and as a result supporting more ethical corporate behavior to approach technology for humanity stepwise. Thirdly, this discipline-dependent knowledge aggregation lays the foundation for further interdisciplinary research on CDR and an according understanding of the concept.

The paper proceeds as follows: The next section introduces CDR in detail, also distinguishing it from related concepts and discussing it in the light of electronic markets. Section 3 provides detailed information on the underlying methodology of this study—an extended systematic literature review. Following, Section 4 presents the results and synthesizes the key insights from previous research. Section 5 then aggregates prior research results towards a conceptualization of CDR and proposing a (future) research agenda. Finally, this study concludes with a discussion, highlighting the main contributions, and reviewing this study's limitations.

Theoretical background

The evolving concept of CDR has some overlapping with the well-established concept of CSR, both sharing similar aims and relating to the overarching concept of *corporate responsibilities*. The concepts of CSR and CDR share the goal to minimize adverse effects that corporate practices cause while maximizing their positive outcomes. Albeit, CDR and CSR differ in their foci (Mihale-Wilson et al. 2022): CSR has a social and environmental focus and addresses related consequences (Maignan and Ralston 2002). In contrast, CDR intends to maximize the positive impact of corporate activities and minimize the negative outcomes in the context of digital products, services, and technologies (Lobschat et al. 2021; Mihale-Wilson et al. 2021). To allow for a better understanding of the concept of CDR and its related concept roots, in the following section, this study first introduces CSR before delaminating and characterizing CDR followed by a discussion of the latter in the light of electronic markets.

Corporate social responsibility

CSR addresses the alignment of companies with stakeholders' and society's norms, values, aims, and expectancies. According to the concept of CSR, firms should consider the consequences of their actions especially in economic, ecological, and social terms (Aguinis 2011). In this regard, companies can enhance quality of lives by assuming additional social responsibility. Following the concept of CSR, companies must exceed legal obligations (e.g., laws) by acting according to the principle “what is right, just and fair, even when they are not obliged to by the legal framework” (Matten and Moon 2007, p. 181). Voluntarily assuming more responsibilities concerning the social well-being of stakeholders affected by the company's conduct is central to CSR (Matten and Moon 2008; van Marrewijk 2003). Still, CSR activities can also be beneficial for corporate interests (e.g., Wickert 2021), especially in the long run. As of now, the

concept of CSR is crucial for companies of all sizes, industries, and types, being very diverse in practical application. The integration of CSR in corporate practice depends, e.g., on stakeholder influences, applicable standards, certifications, and regulatory minimum requirements. Therefore, degree and type of CSR implementation vary vastly between companies.

Corporate digital responsibility

The emerging concept of CDR partly overlaps with the well-established concept of CSR in the sense of joint goals and addressing social and environmental issues. However, CDR should (currently) merit scholarly and practical attention as an independent concept as its focus lies on inherent threats and peculiarities that are unique to a digitalized world and the tremendously more complex corporate responsibilities induced by (digital) technologies (Lobschat et al. 2021). According to Lobschat et al. (2021), several characteristics justify the distinction of CDR, particularly the potential “exponential growth,” “the malleability of digital technologies,” and “the pervasiveness of digital technologies” (Lobschat et al. 2021, p. 876). Digital solutions allow for even more efficient data use and combination of technologies, leading to potentially exponential growth (Lobschat et al. 2021). Furthermore, despite best intentions, technology can be used in harming ways, not intended when developing them, thus leading to (unintentional) malleability of digital technologies (Lobschat et al. 2021). The ubiquity of digital technologies in private and professional surroundings allows for a more encroaching collection of insights than it was feasible in the offline context (Lobschat et al. 2021). More data and increasingly sensitive data are available for a growing amount of stakeholders, thus being more intrusive than analogous technologies. Building on these characteristics of the digital world, Royakkers et al. (2018) introduce six central ethical and/or societal challenges of the digital world, namely (i) autonomy, (ii) balance of power, (iii) human dignity, (iv) justice, (v) privacy, and (vi) security (Royakkers et al. 2018). Some of these challenges also apply to the offline world; however, the digital setting intensifies these challenges or relate to unique impacts and cases. Thus, well-established approaches like CSR are also applicable to the digital context and cover occurring challenges (at least) partially (Carl et al. 2022). However, CSR does not assign digital technologies and corresponding particular or intensified risks a central role (Lobschat et al. 2021; Mihale-Wilson et al. 2022), e.g., related to mental safety, privacy, and data security. The centrality of technology within the two concepts distinguishes them and justifies separate consideration in research and practice (Mihale-Wilson et al. 2022) at least in such an early stage (Dörr 2021; Mueller 2022). We follow the stream of research arguing that CSR and CDR

(currently) deserve individual attention in the context of the umbrella concept of corporate responsibility despite substantial overlaps. National regulations (partly) cover some aspects of CDR (e.g., the GDPR). However, CDR encourages companies to assume more responsibility voluntarily beyond the legal minimum. Accordingly, following the laws does not describe voluntary assumption of more responsibility in the sense of CDR. However, there is no uniform understanding of activities in the light of CDR globally due to differing statutory requirements.

CDR provides guidance for the company's interaction with several stakeholder groups including, e.g., shareholders, employees, consumers, and the society itself (Lobschat et al. 2021). Relevant stakeholder groups have heterogeneous interests; thus, one review does not fit each stakeholder group equally (Trittin-Ulbrich and Böckel 2022). Consequently, this study focuses on one specific stakeholder group to develop a nuanced understanding for the interaction with this group—consumers. Since several CDR efforts address consumers' interests and concerns, this study pursues to provide an understanding of CDR directed at this key stakeholder group. In this way, we follow prior research's call to incorporate consumers' view into corporate considerations when affected by them in the digital world (e.g., Graf-Drasch et al. 2023; Scheider et al. 2023). Consumers' impression of a company's CDR activities potentially influences their perception of a company and, as a consequence, consumer decisions (e.g., Hann et al. 2007). Empirical evidence already illustrated that consumers value various CDR activities differently (e.g., Carl, Mihale-Wilson, et al. 2023a, 2023b), influencing the perception of the company. Companies pursuing CDR commitment vastly differ in the context of electronic markets and comprise, e.g., platform, product, or service providers. This research aims to provide comprehensive support to companies in a digital context and accordingly includes the various corporate actors in the consideration of the scope of CDR.

Concerning the scope of CDR and its systematization, there is still no consensus in the research community. Rather, different, mostly practice-driven systematizations emerge describing various areas for responsible corporate behavior.¹ These approaches share the common understanding of CDR and most aspects of the various frameworks are in agreement (e.g., privacy, data security, access, transparency); however, differences in the understanding of the scope and foci distinguish the different systematizations (Mihale-Wilson et al.

2022). Consequently, most approaches share a similar definition of CDR and superficial understanding besides sharing the perception that the underlying norms of CDR have its roots in (digital) ethics (Mueller 2022).² Several aspects of CDR as well as its roots are well established in IS and particularly in electronic markets research, e.g., privacy and data security (Bélanger and Crossler 2011). Consequently, despite the novelty of the concept itself, underlying values and activities are not new to IS nor electronic markets research. Therefore, it is useful to aggregate previous research results and assess what prior knowledge we can already subsume under the concept, thereby supporting more responsible electronic markets.

Yet, prior research often focused on providing overviews on specific sub-dimensions that subsume under the concept of CDR. For example, there is a broad range of publications addressing the sub-dimension of privacy or access and providing an overview on previous research findings (e.g., Agarwal et al. 2009; Smith et al. 2011). However, aim of this study is to move one level up.

CDR-related research focused on the provision of an overview on definitions and the employment of CDR (e.g., Herden et al. 2021) or the aggregation of prior research dedicated to CDR, its conceptual roots, and future research avenues (e.g., Mihale-Wilson et al. 2022; Mueller 2022). Our research efforts exceed the mere definition of the CDR concept and the status-quo of research directly related to CDR. Rather, this study builds on CDR-relatable research endeavors in IS and particularly electronic markets research and targets an enhanced, deeper, and more structured conceptualization of CDR and its scope. First research endeavors summarized underlying core principles in the context of digital responsibility (Trier et al. 2023). Such efforts condense key components of digital responsibility on the meta-level, situating the concept in a broader context. However, to the best of knowledge, no previous research provides an inductively developed, comprehensive systematization of CDR dimensions, sub-dimensions, and corresponding fields of action based on prior research not directly related to CDR, therefore enlightening on the meso-level of CDR. In this vein, this study builds on meta-level efforts like Trier et al. (2023) to advance the understanding of the scope of CDR by condensing knowledge already available in IS and particularly electronic markets research that is linkable to the umbrella concept CDR, thereby providing an in-depth understanding of the concept scope up to concrete fields of action.

¹ Exemplary approaches and concepts concerning CDR are the "CDR Building Bloxx" (Bundesverband Digitale Wirtschaft (BVDW) e.V. 2022), the "Corporate Digital Responsibility Manifesto" (Price 2023), the "Digital Responsibility Goals" (Identity Valley Research gUG 2022), and the "Indicators of Consumer Protection and Empowerment in the Digital World" (Thorun et al. 2017).

² For a clear demarcation of the concept of CDR and its roots in ethics, please refer to Mueller (2022).

Electronic markets and CDR

Electronic markets nowadays influence “all aspects of modern economies” (Alt and Zimmermann 2014, p. 161) and industries in their entirety (Alt and Puschmann 2012). The perception of electronic markets developed over time from the definition of electronic standards and documents communication to the inclusion of omni-channel environments, social media, multi-channel client ecosystems, and big data (Alt and Zimmermann 2014). Nowadays, digital platforms are one major form of electronic markets (Alt 2020a). They allow economic interaction between multiple players supported by digital infrastructure (Alt 2020b, 2020a; Nahr and Heikkilä 2022), simplifying transactions (Alt 2020a) and thereby enabling the development of more sophisticated digital products and services as well as fueling the advancement of technologies. The interaction itself but also the provisioning of enhanced digital products, services, and technologies entails risks and threats and therefore gives rise to corporate responsibility, like an increasing consideration of explainability when deploying automated systems in electronic markets (e.g., Brasse et al. 2023). Consequently, comprehending social implications of electronic markets can be crucial for their success (Alt and Klein 2011).

Large, omnipresent digital ecosystems like those around Apple or Google (Alt 2020a) illustrate the need for CDR, e.g., in terms of protecting consumers’ economic interests (e.g., by avoiding lock-in effects), their privacy (e.g., by ensuring limited data collection and usage), their rights in case of interconnected failure (i.e., since the source of damage might be difficult to trace back), and a viable competition (i.e., avoiding monopolistic structures). Furthermore, electronic markets can connect seller and buyers from all over the world, offering products that are only assessable in their quality after purchase. To this end, due to the physical distance, responsibilities intensify concerning problem solving (e.g., delivery issues), warranty (e.g., product damage), and contacting opportunities (e.g., various communication channels). Social media as platforms for business activities pose very distinct risks, e.g., regarding securing the mental health of users (e.g., preventing online addiction), the deployment of automated systems (e.g., awareness and explainability), and biased recommender and filtering systems (e.g., filter bubbles).

Above all, technological advancements enable seizing chances for each participant of electronic markets but also entail risks that need to be addressed for a responsible and ethically sound development. CDR provides a holistic and technology-independent approach to these responsibilities emerging in the context of electronic markets that encounter heterogeneous risks and threats. Accordingly, CDR can assume an important function in electronic markets research in the future.

Methodology

Aim of the conducted literature review is to aggregate renowned research in IS and particularly electronic markets research. The following sections address the methodology of the conducted study and the employed (searching) strategy.

Extended systematic literature review

Systematic literature reviews (SLR) provide an overview on the current state of research on a distinct topic. Aim of an SLR is to aggregate prior research results, also uncovering currently less researched aspects of the topic under investigation (Snyder 2019). In particular, we employed a theoretical review approach that fosters the development of a conceptualization in the context of emerging topics (Paré et al. 2015). This involves a synthesis of the extracted research findings (Okoli and Schabram 2010) especially focusing on prior research outcomes. Results of SLR are relevant for practitioners and researchers alike (Snyder 2019). On the one hand, the aggregated findings can inform and guide practitioners. On the other hand, they provide an orientation for researchers on the current state of research, also developing future avenues for research based on the synthetization of prior knowledge (Paré et al. 2015; Schryen et al. 2020; Snyder 2019). Besides, an important step when performing an SLR is to aggregate and cluster previous research. This step can also inform the conceptualization of a theory construct (Paré et al. 2015; Snyder 2019). Employing an SLR approach to synthesizing prior knowledge is widely spread in IS research (e.g., Goel et al. 2021; Malinova and Mendling 2021).

However, there are also criticisms of this systematic approach to literature search (e.g., Boell and Cecez-Kecmanovic 2015; Boell and Wang 2019), e.g., due to the results being limited by keywords, especially in the case of very divergent nomenclature and evolving concepts. Some scholars propose rather unstructured, exploratory approaches to literature reviews (i.e., traditional narrative literature reviews) to ensure a broader inclusion of relevant publications (Boell and Cecez-Kecmanovic 2015).

There is merit in both—systematic and unsystematic—approaches and both established themselves in IS research. To exploit the strength of both approaches and to account for their shortcomings, we employed a search strategy that we call an “extended systematic literature review” (ExSLR). For this purpose, we conducted a forward search according to the principles of SLR followed by an extensive backward search to soften the constraints of an SLR,

to pursue a more exploratory and unstructured approach, and to develop a broader understanding of the subject matter. In this way, we exploit the potentials of an initial systematic approach as well as an intensive backward search to surmount the constraints of the initial corpus (Webster and Watson 2002).

Strategy

The conducted ExSLR grounds on the well-established guidelines by Kitchenham (2004) and employs the grounded theory literature-review method (Wolfswinkel et al. 2013) particularly suitable for theoretical reviews (Paré et al. 2015). This approach ensures transparency and reliable and trustable results. The five-stage process of the grounded theory literature-review method consists of (i) *definition*, (ii) *search*, (iii) *selection*, (iv) *analysis*, and (v) *presentation* (Wolfswinkel et al. 2013). A detailed review protocol accompanied the whole process featuring the employed search, exclusion and inclusion criteria, the search strategy (i.e., process, knowledge extraction), results, and related decisions made.

In the *define* phase, we decided on (and iteratively modified) the inclusion and exclusion criteria. We limit the results to peer-reviewed publications, thereby including only journal and conference articles that meet this criterion.³ To focus on the research goal, this study employs two exclusion criteria. The application of these criteria ensures the consistent pursuing of the objective of the study across all evaluation steps. We applied the following exclusion criteria:

- publications without a business-to-consumer focus,
- publications not adaptable to or without a focus on corporate responsibility and its distinct aspects in the setting of digital products, services, markets, and technologies.

Besides, we defined the fields of research captured in this study. Due to the focus on technologies (i.e., designing and deploying technology as well as assessing its consequences) (Legner et al. 2017; Mihale-Wilson et al. 2022; Watson et al. 2010) and the practical feasibility of concepts developed in this discipline, IS research and its sub-disciplines seem to be an important building block for the further development of the concept CDR (Mihale-Wilson et al. 2022). Accordingly, this study excludes other disciplines such as ethics, marketing, and similar related research areas in the forward search following the aim to aggregate the state of knowledge currently available in IS research, thereby fostering the further establishment of the concept in this discipline and particular field. Research in IS and particularly EM research on

responsible and ethically sound digitalization is scattered as of now. In the future, this discipline-dependent understanding can enable cross-disciplinary research aggregating the different disciplines' approaches to responsibilities in the digital context. Thus, this study aims to accumulate available knowledge to contribute to a more holistic understanding of responsibilities in the digital world. Due to the importance of CDR especially in the context of electronic markets, this study emphasizes this sub-discipline in the study.

As a starting point, this search covers the top-ranked IS journals (i.e., Senior Scholars' Basket of Eight Journals⁴) to capture a first IS view on CDR. We employed a basket-based search strategy for the forward search as the top journals normally account for major contributions to a topic. Since the individual aspects of CDR (e.g., privacy, transparency, access) are not new to the discipline but established research areas since decades, the top journals of IS and EM research are a good starting point for a sound understanding of CDR-relatable knowledge. However, such an approach presents one central limitation of this study despite being established in IS research. Still, searching a whole discipline is beyond the scope of one single publication. Accordingly, we opted to integrate knowledge available in the most central publications of the discipline. Besides, to capture the specific perspective of electronic markets research on the topic, we also incorporated the Electronic Markets journal. In this vein, we aim to show that corporate responsibility in the digital context is not new to IS or electronic markets research nor to the top-ranked journals of the discipline despite the novelty of the concept as such. In the forward search, we intentionally limited our focus to outlets in IS and specifically electronic markets research to first establish a foundation for further research regarding CDR in this particular discipline. Yet, research on individual aspects of CDR is scattered in the relevant disciplines, therefore requiring a focus on one discipline in the first place. Thus, we have also neglected disciplines contributing to CDR such as business ethics, computer science, or marketing here to actually illustrate the state of research in IS and electronic markets research. This lays the foundation for future, potentially interdisciplinary research accumulating each discipline's condensed understanding of CDR and its facets. The search process employs the database EBSCOhost to cover each of the eight top-ranked IS journals to be able to deploy the same search term for each of the journals searched, as some do not allow to search employing wildcards. Still, using wildcards allows covering the most diverse conjugations and formulations, since it is not preset terms. For the Electronic Markets

³ This criterion is especially important for the backward search.

⁴ At the time the research project started, the Top Basket comprised only eight journals. We therefore searched the Senior Scholars' Basket of Eight, instead of the current eleven Top Basket journals.

Table 1 Search term used

Domain	Keywords
Concept-related	((“market” OR “corporate” OR “business”) AND “responsibility”) OR “ethic*”
Object-related	“product” OR “good” OR “service” OR “tech*” OR “econ*” OR “platform*” OR “market” OR “commerce”

This study employs wildcards (*) and Boolean operators in the search term. The final search term consists of the two domain keyword sets connected with the Boolean operator “AND”

journal, we searched both databases of the current and the previous publisher of the outlet. The same search strategy (i.e., search term, criteria) applies to each of the search queries, conducting an independent search for every journal.

The search grounds on a fixed selection of keywords for the forward search following established approaches (e.g., Malinova and Mendling 2021). To ensure a comprehensive understanding of the topic in IS research particularly in the context of electronic markets, the authors conducted an initial brief search and drew on their long experience with the topic to develop a comprehensive keyword set (i.e., concept- and object-related keywords) that covers as many relevant articles as possible that can be linked to CDR and according objects that the concept applies to. The initial brief search also served to ensure an understanding of the typical nomenclature of relatable concepts, research issues, and application scenarios in the IS research discipline and its sub-disciplines. The search term developed consists of two domains (see Table 1) and reflects alternative terminologies discovered during the initial brief search and prior experience in the field. One domain is concept-related. The corresponding search term aims at covering a wide range of articles related to (corporate/market) responsibilities, the umbrella concept that CDR relates to, and the concept’s underlying norms derived from (digital) ethics in IS. Such a broad search employing the corresponding umbrella concept as well as its roots should ensure a solid understanding of research relatable to CDR. Due to the novelty of the concept of CDR itself, it is not sensible to search for this term since the majority of prior research is linkable but did not refer to the concept explicitly. Rather, this study should assess prior research in the context of corporate responsibilities and the underlying ethical roots on applicability for responsibilities captured by the concept of CDR. CDR captures responsibilities of companies that emerge or intensify in the context of digitalization, e.g., related to the development and deployment of digital products, services, or technologies. Thus, the search covers, e.g., overlaps with the concept of CSR that also apply to the concept of CDR. Both concepts have some overlaps despite deserving individual attention in theory and practice, at least as of now. Thus, the concept-related search terms should capture a wide range of knowledge that the coders then assess for applicability to and relevance for the digital setting and therefore the concept of CDR. To limit the

number and to ensure the relevance of the results, the search term also employs an object-related domain. The concept of CDR applies to a wide range of digital products, services, markets, and technologies such as AI, machine learning, and multi-sided platforms just to name a few. The search accounts for this specific context of CDR by limiting the results to the relevant context (e.g., products, platforms). This study did not apply a restriction to specific technologies (such as AI) to provide a comprehensive picture of the broad applicability of CDR as the concept is applicable from digitalized products and services to AI-based systems or platforms and technologies. Searching within the discipline of IS already ensures a main focus on digital technologies and its applications, therefore integrating the digital context. This search strategy ensures a comprehensive understanding of the applicability of the concept of CDR in IS research, particularly in the context of electronic markets.

This study employs wildcards (*) and Boolean operators in the search term. The final search term consists of the two domain keyword sets connected with the Boolean operator “AND”

The search process captures several search fields: the title, classification codes, abstract, keywords, and subjects. Prior research often touched corporate responsibilities but did not focus solely on them; thus, the title often does not contain the search term. Consequently, including more search fields in the search process leads to a more comprehensive understanding of prior research on corporate responsibilities in the digital context. However, such an ExSLR cannot be exhaustive due to the dispersed field of prior research on this distinct topic. This study should rather provide guidance on previous research results relatable to CDR. For this, previous research results also have to be transferred from other research directions within IS and electronic markets research, since there is hardly any research on CDR itself or the moral obligations of an enterprise so far. Consequently, the search process focuses on publications that address corporate responsibilities, ethical considerations, or consumers’ expectations towards companies. Due to the concept’s novelty, this study includes mainly publications that do not designate their findings to the context of CDR.

Two independent researchers performed the iterative *search*, *selection*, and *analysis* process: Both researchers screened and coded the data in parallel in each of these

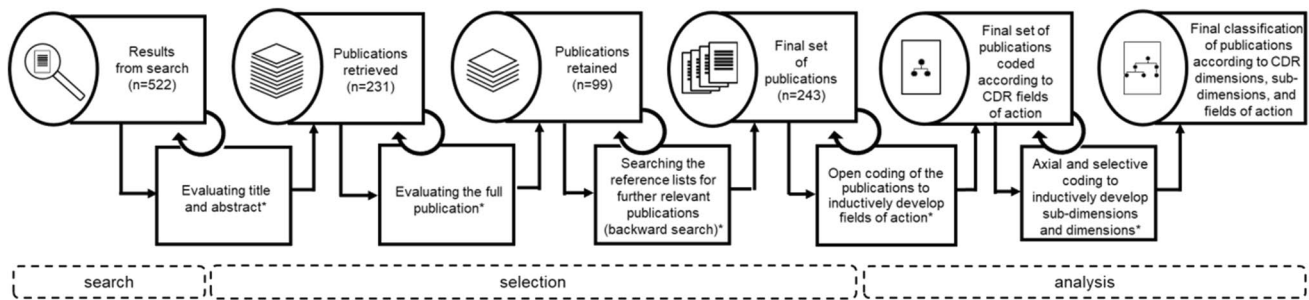


Fig. 1 ExSLR process including coding steps

three phases. After each round, the team discussed possible deviations and settled them in mutual agreement potentially revising the last round. This led to partly repetitive cycles in search, selection, and analysis until adequate consensus (see Fig. 1). In addition, an external coder followed the process and reviewed the coding results after the final coding. The external coder sampled and assessed an excerpt of the publications including their coding besides evaluating the developed classification scheme. This external coder agreed with the derived assignments for the examined sample and the classification scheme as a whole, further ensuring the quality and rigor of results.

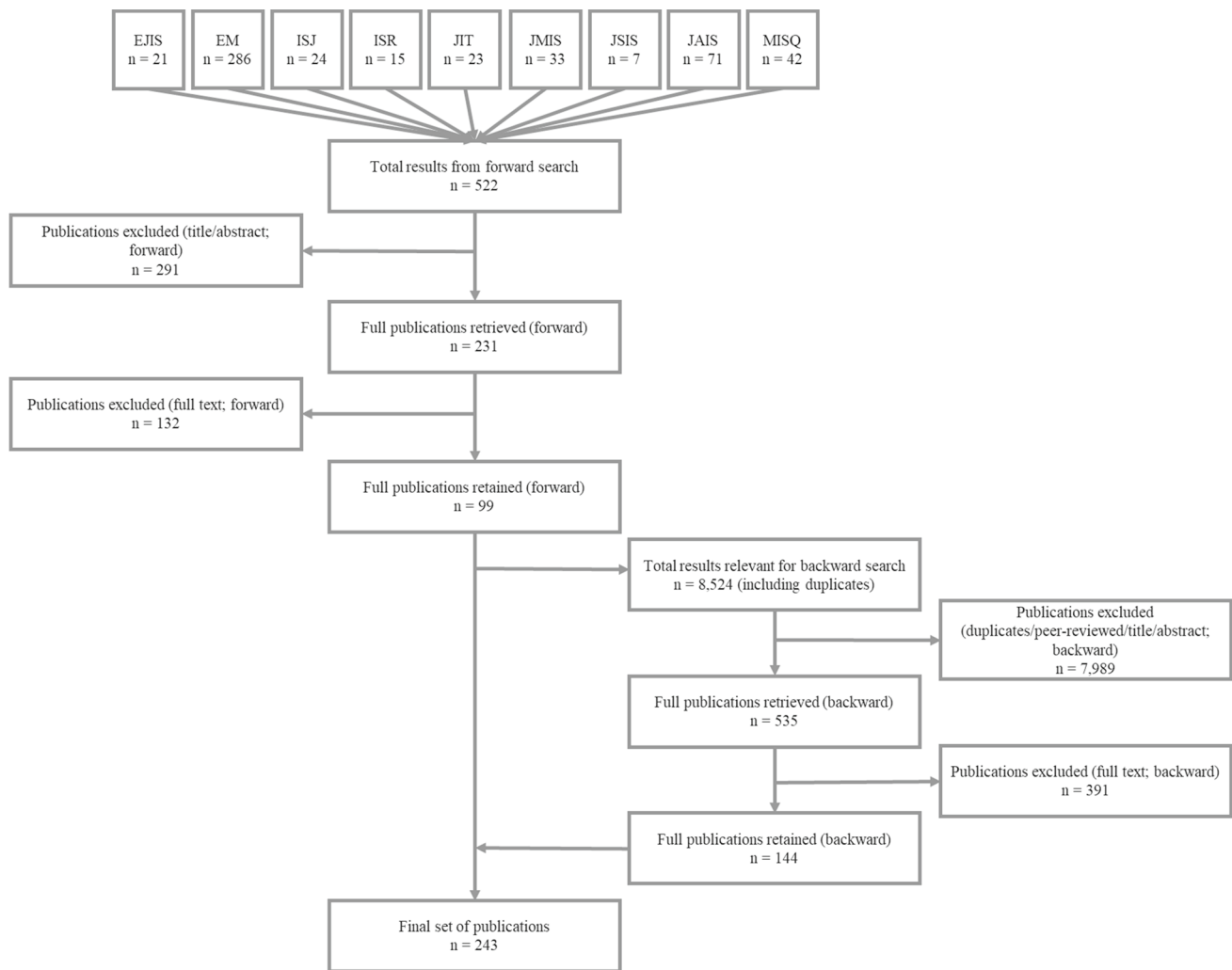
The *search* covered papers published until the end of 2023 to provide a current picture of prior research. This initial search yields 522 publications (see Fig. 2). Following the proposed *selection* process (Wolfswinkel et al. 2013), an initial screening of the derived publications including their title, keywords, and abstract moves the process forward by excluding publications with a misfit concerning the research goals and search criteria (i.e., the exclusion criteria). This process step already includes the screening of further publication sections (i.e., introduction, conclusion) in questionable cases. The initial screening leads to an exclusion of 291 papers, and thus, we arrived at a sample of 231 relevant (retrieved) publications.

The screening process further includes the evaluation of these 231 publications in detail (i.e., according to the whole text) concerning their fit to the research goals and criteria in the second step of the conducted ExSLR. This process left us with 99 relevant publications (see Fig. 2) and led to the exclusion of another 132 publications due to the aforementioned exclusion criteria. The broad search term results in a correspondingly high exclusion rate during the screening process. Nevertheless, conducting a broader search was necessary due to the dispersed field of previous research to ensure the adequate presentation of previous research.

The next step, which is pivotal for our proposed ExSLR process, includes an intensive backward search. We used a “snowball” technique to identify further relevant publications within the reference lists of our retained publications as common for backward search in IS (e.g., Malinova and

Mending 2021; Webster and Watson 2002). We searched for additional publications not yet in the data set that add to the IS’ understanding of topics relating to the concept of CDR, thus condensing knowledge discussed in IS and particularly electronic markets research in a context relating to CDR. Consequently, we also include research articles in this step that publications in IS and electronic markets research referenced regardless of whether these referenced publications originate from other research disciplines (e.g., ethics, computer science). In this way, we opened up to incorporate insights from other disciplines if this knowledge is readily available in the IS discipline (i.e., cited in the IS or electronic markets publications retrieved from the forward search). We received another 8524 references (including duplicates) in the reference lists of the retained publications. We applied the same inclusion and exclusion criteria as in the last ExSLR steps to evaluate the relevance of the discovered publications for our study. After the first round of screening the titles, abstracts, and keywords, we deemed 535 publications potentially relevant. After detailed screening of the retrieved publications, this search yields 144 additional, relevant publications. Consequently, the final set of publications comprises 99 forward search articles as well as these 144 backward search publications (in total 243 publications, see Fig. 2). The sample consists of 90.5% journal publications and 9.5% conference proceedings due to the forward search being limited to journal publications and the frequency with which journal articles refer to journal papers instead of conference publications. Due to the backward search, the derived publications stem from IS and particularly electronic markets research supplemented by the findings of other research disciplines (e.g., computer science, psychology, marketing, and ethics) that are referenced in this field of research. Accordingly, we can map influences from other disciplines on the understanding of CDR-relevant research in IS and electronic markets research with the sample formed.

The *analysis* step of the grounded theory literature-review method process features the final set of 243 publications (i.e., forward and backward search publications, see Fig. 1) and aims at coding them based on publication details (e.g.,



Note: EJIS: European Journal of Information Systems; EM: Electronic Markets; ISJ: Information Systems Journal; ISR: Information Systems Research; JIT: Journal of Information Technology; JMIS: Journal of Management Information

Fig. 2 Results of the ExSLR performed

publication, year, methodology) and their potential contribution to the understanding of CDR (see Tab. A.1 and A.2 (Online Appendix)). Due to the lack of a suiting coding scheme, the coding process grounds on a newly developed, multiple classification-coding scheme⁵ employing the grounded theory literature-review method according to Wolfswinkel et al. (2013). Yet, there is no consensus in research nor practice on one nomenclature of CDR; thus, employing grounded theory methodologies to develop a theoretical contribution is suitable. The open coding regarding concrete fields of action as well as the axial coding to develop interrelations between categories and sub-categories (i.e., developing sub-dimension that aggregate fields of

action) was conducted inductively. In this way, this study proposes a more in-depth classification of prior research according to inductively developed sub-dimensions and corresponding fields of action based on the obtained data. This part of the coding process aims at synthesizing prior knowledge to expand the theoretical conceptualization of CDR in depth by building a theoretical framework of possible CDR sub-dimensions and corresponding fields of action, thereby complementing the currently debated scope of CDR.

The selective coding led to the definition of ten inductively developed CDR dimensions including one overarching principle. In the conceptualization, all dimensions are of the same importance, even if research and practice tend to focus primarily on a few of these dimensions, mostly also due to legal requirements. The newly developed systematization features the ten following dimensions: (AC) *access*; (CL) *consumer literacy*; (CSP) *customer support and problem*

⁵ Multiple classification schemes allow coders to assign one publication to several categories.

solving; (IPS) *internal permanence schemes*; (PRS) *product design*; (PRP) *product deployment*; (PDS) *privacy and data security*; (SI) *stakeholder integration*; (SU) *environmental sustainability*; and the overarching principle (TR) *transparency*. Some dimensions, sub-dimensions, and fields of action apply in the offline as well as the online context. Nevertheless, the online context increases the relevance of some of these fields of action, such as the education of consumers, especially with regard to their (digital) rights, skills, and self-determination. Thus, we incorporated dimensions, sub-dimensions, and fields of action regardless of their overlap with (corporate) responsibilities in the offline context. The concept of CDR has some important overlaps with established concepts and approaches to corporate responsibilities despite their differing foci, which necessitates the inclusion of all fields regardless of their importance for the offline context.

Research relatable to corporate digital responsibility

This section introduces the results of the ExSLR by providing an overview on the status-quo of CDR-relatable IS research, thereby fostering responsible electronic markets. The subsequent sub-sections present the CDR dimensions in detail, their sub-dimensions, and fields of action as well as their relevance in the digital world. In the Online Appendix, we included additional information on the conducted ExSLR: Table A.1 (Online Appendix) illustrates the retrieved publications from the ExSLR and their assignment to the CDR dimensions employing a multiple classification scheme.⁵ Based on this assignment, Table A.2 (Online Appendix) describes the detailed assignment of publications to specific sub-dimensions and fields of action. Consequently, the Online Appendix illustrates the derived results of the conducted ExSLR in detail while the following sections provide a brief insight into the results before proceeding with the conceptualization based on the obtained results. Aim of this study is not to provide a complete enumeration of possible fields of action in each sub-dimension. Rather, the following sections describe possible applications of each of the ten developed CDR dimensions to illustrate the scope of each dimension, possible sub-dimensions, and fields of action.⁶ The following sections introduce the

detailed systematization of the ten CDR dimensions derived from previous research. Each of the derived sub-dimensions and fields of action address the context of digital products, services, technologies, or concern the digital interaction of companies and consumers.

Access

The dimension of *access* describes consumers' possibility to access (basic) digital markets, technologies, and its applications also in the context of disabled inclusion (e.g., color blindness). Access especially gains in importance in the context of a more and more digitalized world. Plenty of activities in the consumers' daily lives are directly or indirectly affected by digital technologies, requiring access for the accomplishment (Lobschat et al. 2021). For example, being able to use apps technically as well as mentally can be a prerequisite to perform tasks like bank transfers and being able to participate in increasingly ubiquitous electronic markets. According to CDR, companies can provide this access by employing activities aimed at (i) *diminishing the digital divide* and minimizing (ii) *required capabilities* where possible (see Fig. 3). Activities related to diminishing the digital divide refer to the possibility to actually access digital products, services, or technologies regardless of the capability to actually use or understand it (i.e., the required capabilities). Companies can diminish the digital divide in terms of prerequisites for using the digital products, services, or technologies regarding Internet speed, hardware and software preconditions, geographical availability, or the level of affordance. Required capabilities cover on the one hand necessary capabilities to actually operate or use (e.g., how to start an app) and on the other hand requisite knowledge necessary for the safe operation and understanding of the digital products, services, and technologies (e.g., understanding which settings mean what for the heating control). In a more digitalized world, these capabilities increase in importance to be able to participate actively and to seize the chances digitalization offers for individuals.

Consumer literacy

Consumer literacy aims at developing consumers and their awareness concerning consumption consequences. This dimension covers a broad application field like problem coping or information seeking. The necessity for education and therefore an increased literacy is even reinforced by the ubiquity of electronic markets and the evolution of more sophisticated digital technologies such as blockchain technology and new concerns associated with it. Literacy allows consumers to participate in a more digitalized world but also to assess individual consequences, risks, and threats that accompany digital products, services, and technologies.

⁵ National regulations (partly) cover some fields of action. However, CDR encourages companies to assume more responsibility voluntarily beyond the legal minimum. Accordingly, complying with the law no longer describes voluntary assumption of more responsibility concerning CDR. However, in some regions, such activities still present engagement in the sense of CDR, thus being included in the CDR systematization applicable globally. Besides, companies can voluntarily exceed legal requirements.

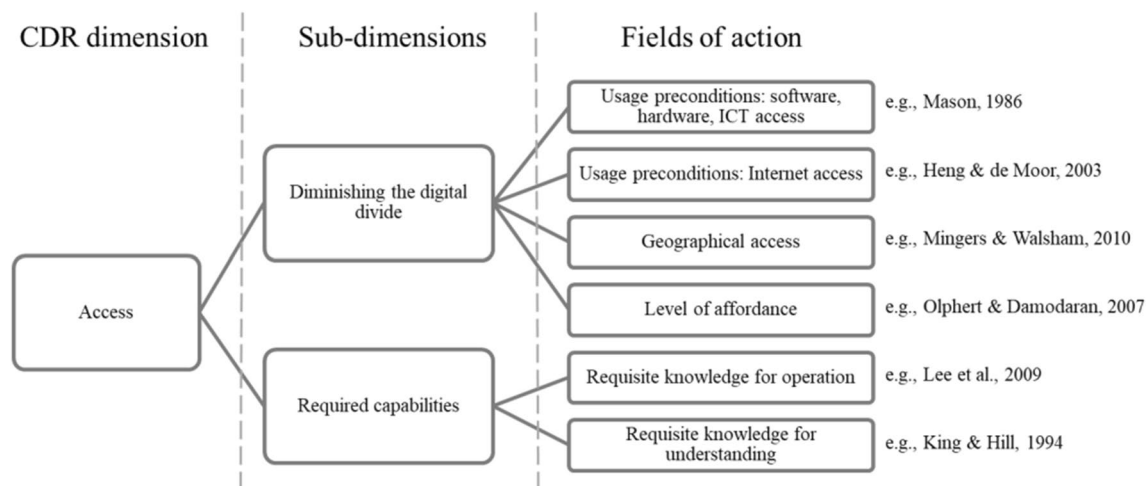


Fig. 3 Access sub-dimensions, related fields of action, and exemplary references (See Table A.2 (Online Appendix) for a detailed overview)

Thus, literacy is a prerequisite for informed decisions, enabled participation, and sovereignty over the own life. While being important in the offline context as well, the digital setting adds a new layer of complexity since digital products, services, and technologies can be more intrusive on the one hand but also less realized on the other hand. While consumers, e.g., are able to judge with whom they are communicating in an offline context, automated systems like AI-based chatbots or recommender systems allow the direct interaction with consumers potentially not even aware of that fact. Thus, consumer literacy regarding the deployment of such systems and potential consequences for consumers allows them to make informed decisions and to secure their sovereignty. Besides, digital products, services, and technologies

require increasing (digital) skills to be able to participate in the digital world (e.g., multi-sided platforms), emphasizing the importance of user development to help consumers keep track with current digital developments. The fast pace of digital change—compared to the evolution of the physical world—makes it increasingly important to support consumers' skills so that they do not fall behind. Correspondingly, within the context of CDR, this dimension covers the two sub-dimensions (i) *user development* and (ii) *awareness development* (see Fig. 4). Both are important building blocks of consumer literacy relevant in the digital setting. The former aims at developing consumers in their skills and by providing advice customized to individual wishes and needs, thus supporting the user in developing (digital)

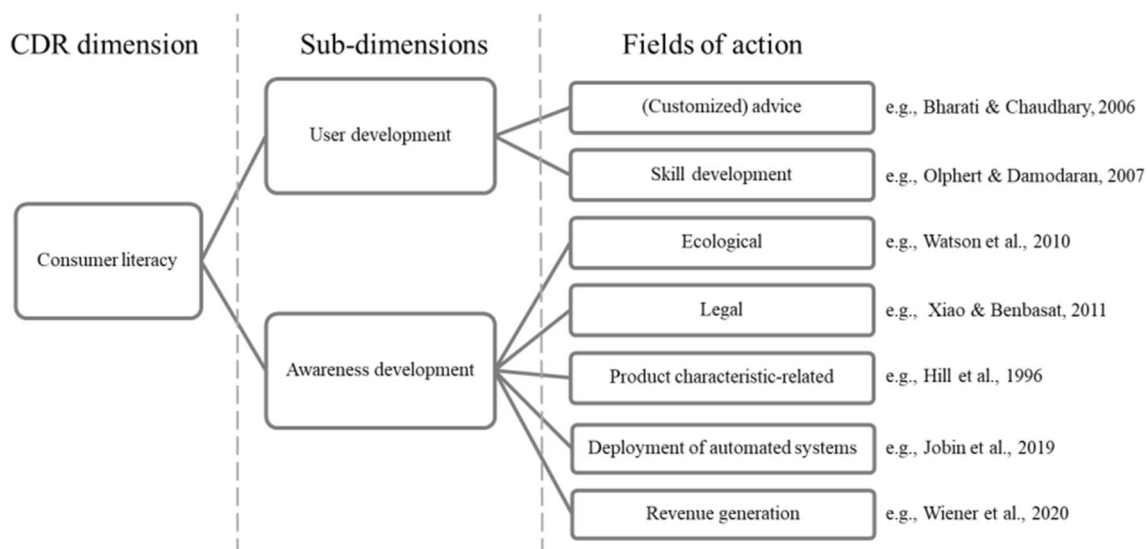


Fig. 4 Consumer literacy sub-dimensions, related fields of action, and exemplary references (See Table A.2 (Online Appendix) for a detailed overview)

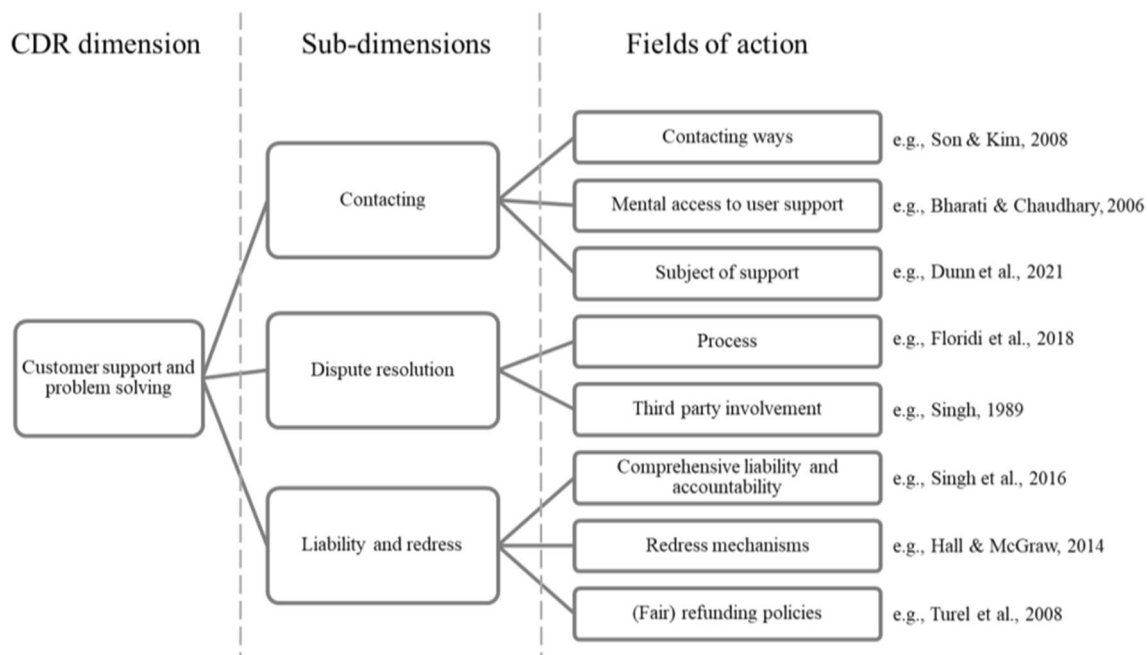


Fig. 5 Customer support and problem solving sub-dimensions, related fields of action, and exemplary reference (See Table A.2 (Online Appendix) for a detailed overview)

capabilities. The latter one aims at creating awareness for particularly relevant characteristics in the digital setting, namely ecological, legal, revenue generation, and product characteristic-related awareness that are emphasized in the digital context and awareness concerning the deployment of automated systems just emerging in the digital setting. Since digital products, services, and technologies can have particularly adverse effects on environmental sustainability (e.g., high energy demand) as well as stemming from how companies generate revenue (e.g., by selling customer data) or potentially infringe consumer rights (e.g., regarding data collection), awareness development in the digital setting is particularly important to ensure consumer sovereignty. Such an awareness is a prerequisite for informed decision-making and therefore vital for consumer literacy in the digital setting.

Customer support and problem solving

Customer support and problem solving is gaining importance in the digital context due to increasing connectivity, softening of national borders, and the (potential) physical distance between seller and buyer, inter alia, enabled by electronic markets. Adequate mechanisms should support consumers in contacting companies, resolving their complaints, facing an adequate liability, and receiving redress when suffering harm from transactions. This dimension gains particular importance in the digital context since the source of damage is (sometimes) difficult to trace. This CDR

dimension comprises three related sub-dimensions, namely (i) *contacting*, (ii) *dispute resolution*, and (iii) *liability and redress* (see Fig. 5). Contacting covers activities ranging from different communication channels that the digital setting allows (i.e., according to personal preferences), to mental access to user support (e.g., easy to understand answers), and the scope of support in terms of the different subjects (e.g., own products vs. whole connected ecosystem). Dispute resolution captures the process (e.g., fair, transparent, fast, free of charge) itself and whether consumers can easily involve third parties. The digital context allows for particularly easy and transparent processes as well as the easy and seamless integration of third parties. Furthermore, liability and redress captures comprehensive accountability and liability in case of harm, especially in terms of (digital) ecosystems of products and services with hard to trace triggers. Besides, this sub-dimension also comprises whether companies establish fixed mechanisms for redress and the fairness of refunding policies, especially in the potential absence of regulatory requirements for liability and redress in a digital, interconnected context.

Product design

Product design is another central dimension of CDR and fosters, e.g., aspects of economic interests of consumers in the context of product design. The digital context imposes potential conflicts regarding interoperability or fair AI between companies and consumers. Furthermore,

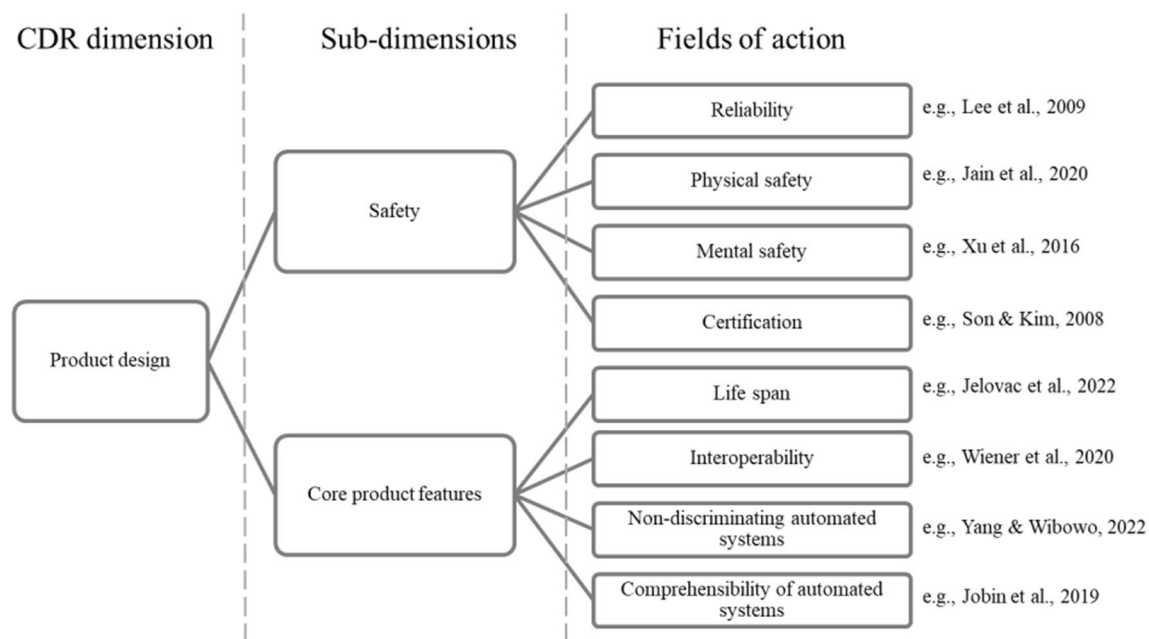


Fig. 6 Product design sub-dimensions, related fields of action, and exemplary references (See Table A.2 (Online Appendix) for a detailed overview)

this dimension comprises a company's action towards the safety of the deployed products. The potential malleability of digital products, services, and technologies that is not even intended when developing and designing products (Lobschat et al. 2021) intensifies the importance of corporate responsibilities in this respect. In the digital context, consumers can experience not only physical but also mental harm through its use, thus making this dimension even more prevalent in the digital setting. This dimension spans (i) *safety* and (ii) *core product features* (see Fig. 6). The former aims at ensuring physical and mental safety as well as reliable systems, thereby also covering certifications, thus benefitting the safe operation of digital products, services, and technologies. The latter sub-dimension comprises core product features like the supported life span (i.e., not limiting the life span artificially), interoperability (i.e., avoided lock-in effect), non-discriminating automated systems, and the comprehensibility of automated systems (inter alia to assess potential discrimination). Such core product features can directly affect consumers' economic interests, which promotes or harms the consumer's welfare in the digital setting.

Product deployment

Product deployment is another vast dimension of CDR and captures, e.g., economic interests of consumers in the context of product deployment. Potential conflicts in product deployment are even reinforced in the digital context exceeding mere competition policies, but rather including, inter

alia, transparency regarding the total costs of ownership. Especially, electronic markets allow for altered pricing and potentially monopolistic market structures. Besides, interests can differ in terms of unbiased product presentation and usage determinants like access without the need to provide unnecessary data. Thus, the dimension related to product deployment features three corresponding sub-dimensions, namely (i) *product presentation*, (ii) *product distribution*, and (iii) *usage features* (see Fig. 7). Product presentation in the digital setting allows influencing consumers and their choices more inconspicuous. Thus, activities in this sub-dimension range from non-misleading product information in the best interest of the consumer, enabling product comparisons to allow consumers to cope with the variety of different versions of products and services, ensuring unbiased and honest customer rating systems, and providing unbiased product recommendations and digital nudges fostering the benefit of consumers instead of the companies' interests. Product distribution in the interest of consumers covers fair competition (i.e., not building monopolistic structures based on lock-in effects), openly informing about the total costs of ownership, and employing business models promoting consumers' economic interests as well (e.g., informing about the payment with data in case of freemium apps). Besides, usage features can benefit or harm consumers' economic interests: Patch release behavior immediacy in case of threats and support period, transparency regarding resource consumption during use, and access to digital products, services, and technologies without the obligation to provide unnecessary data

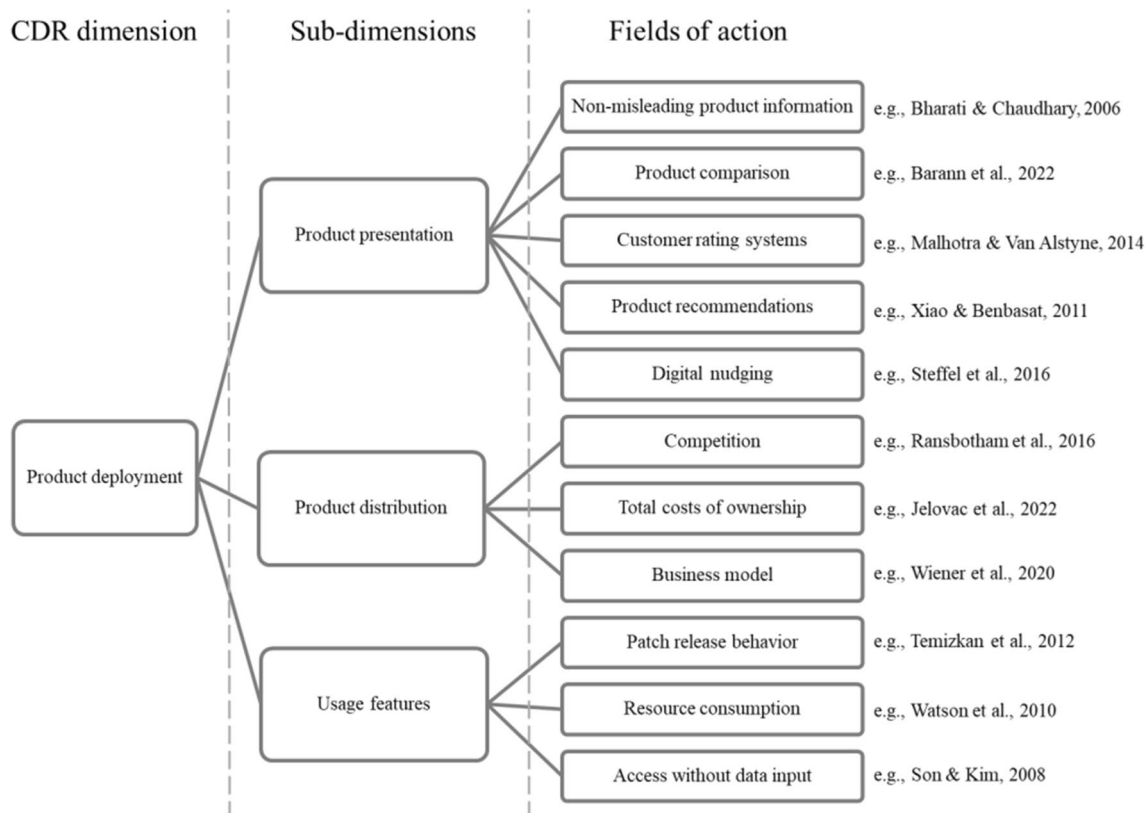


Fig. 7 Product deployment sub-dimensions, related fields of action, and exemplary references (See Table A.2 (Online Appendix) for a detailed overview)

(i.e., not needed for operation but required to gain access) can support the consumer's economic welfare.

Privacy and data security

Privacy and data security describes the consumers' capability to control their data storing, processing, and forwarding, while security addresses the protection of data against possible threats. Even after decades, consumer concerns about privacy and data security are still an important driver of adoption and use of digital technologies. Corporate responsibilities in this field even intensified due to the ubiquity of devices and applications collecting personal data and the increasing sensitivity of the collected data. The amount of collected data developed exponentially in the last years, allowing for more concrete and detailed insights into consumers, their preferences, and (private) habits. Especially within this dimension, transparency is essential to reduce information asymmetries between consumers and companies, since activities in this field are difficult to assess from the outside without further transparency. The CDR dimension of privacy and data security is multifaceted and features several sub-dimensions, namely (i) *data collection*, (ii) *data processing*, (iii) *data management*, and (iv) *transparent*

communication of relevant practices (see Fig. 8)⁶. Data collection ranges from limited collection to the clear purpose of data collection whereas data processing comprises restricted data use and secure storage and processing of user data. Data management covers an adequate data quality (i.e., up-to-date, correct, relevant, labeled) and consumers' access to and chance to correct or delete their personal data in an easy manner. Finally, one important building block of this dimension is the transparent and understandable communication of relevant practices regarding data acquisition (e.g., data collection of automated systems), data transmission (e.g., to third parties), data protection declaration and consent implications (e.g., additionally informing in an easily understandable way), and data storage and processing (e.g., explaining measures to secure collected data).

Stakeholder integration

Stakeholder integration aims at companies providing adequate participation mechanisms for consumers and other organizations. In this way, companies can pursue a consumer-centric product development and refinement through associations, communities, and the society. In particular, in case of increasingly sophisticated digital products, services,

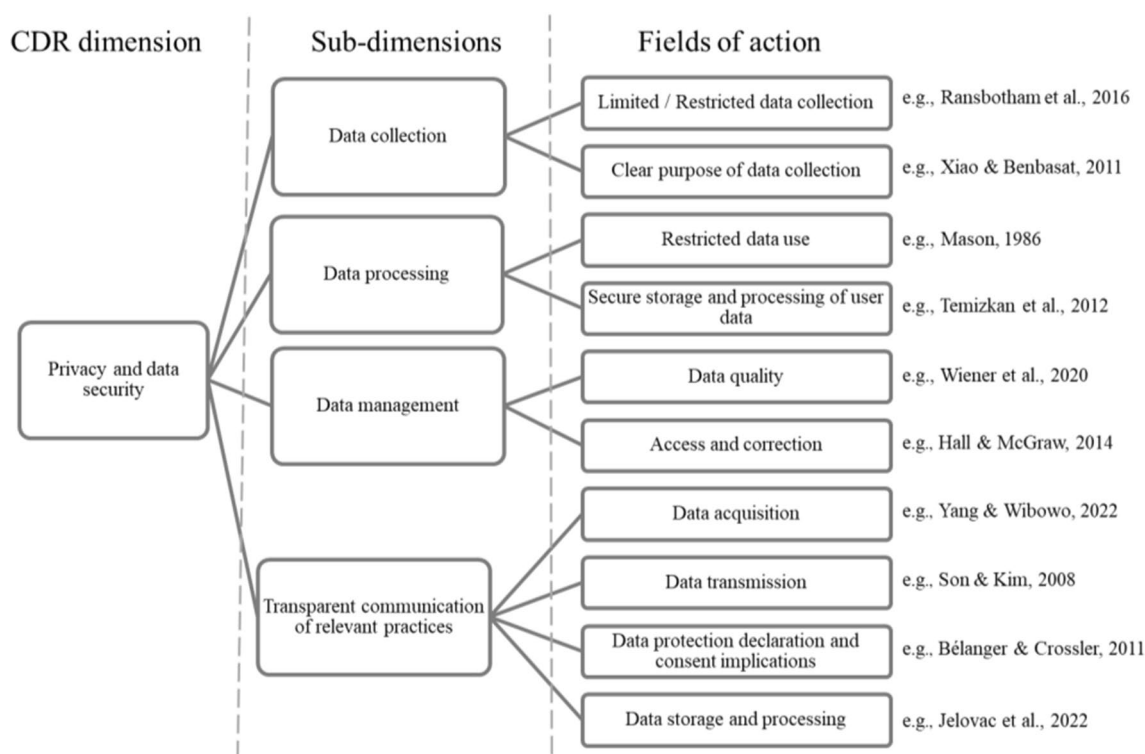


Fig. 8 Privacy and data security sub-dimensions, related fields of action, and exemplary references (See Table A.2 (Online Appendix) for a detailed overview)

technologies, and especially electronic markets, the integration of stakeholders becomes crucial to allow for target group-oriented product development, ensuring, e.g., products that are manageable for consumers. The increasing complexity of digital products, services, and technologies as well as potential adverse implications increase the necessity of stakeholder integration in the digital setting, exceeding the need in the analogous world. Consumers should be able to use and benefit from developed goods and services, thus requiring a design and deployment that puts consumers and their interests in the spotlight. To incorporate this viewpoint during the whole product design and deployment process as well as corporate communication, integrating stakeholders can be vital for companies. Following, stakeholder integration should ensure the consumers' view and according responsibility considerations in the organization. While also being of importance in the offline setting, the ubiquity, the intrusiveness, and the complexity of more sophisticated digital products, services, and technologies intensifies the necessity to incorporate stakeholders or related initiatives during the whole product lifecycle and corporate placement. Accordingly, the CDR dimension of stakeholder integration features two sub-dimensions applicable to corporate practice, thereby incorporating consumers (i) *directly* and (ii) *indirectly* (see Fig. 9). Citizen engagement initiatives can bundle and represent the demands and interests

of consumers; therefore, citizen engagement initiatives directly integrate consumers' needs and wishes aside from the direct participation of consumers. Furthermore, expert communities can contribute to transforming demands into practice (e.g., regarding data security), whereas academia can contribute to anticipating future developments and potentially innovative approaches to capturing the demands of relevant stakeholders (e.g., explainable AI). These initiatives can integrate consumers' needs and wishes in an indirect manner.

Environmental sustainability

Environmental sustainability fosters the reduction of the ecological impact of corporate activities. This dimension includes a wide range of measures designed to limit such consequences. Environmental sustainability gains increasing importance with more sophisticated digital products, services, and technologies that might have adverse effects on the environment. For example, blockchain technology is associated with high energy consumption, thus affecting the environment and making activities aimed at more environmental sustainability vital. Besides, raw material to equip former analog products with digital technologies becomes rarer, requiring new strategies for product design and recycling. The impact of a company's not (environmentally)

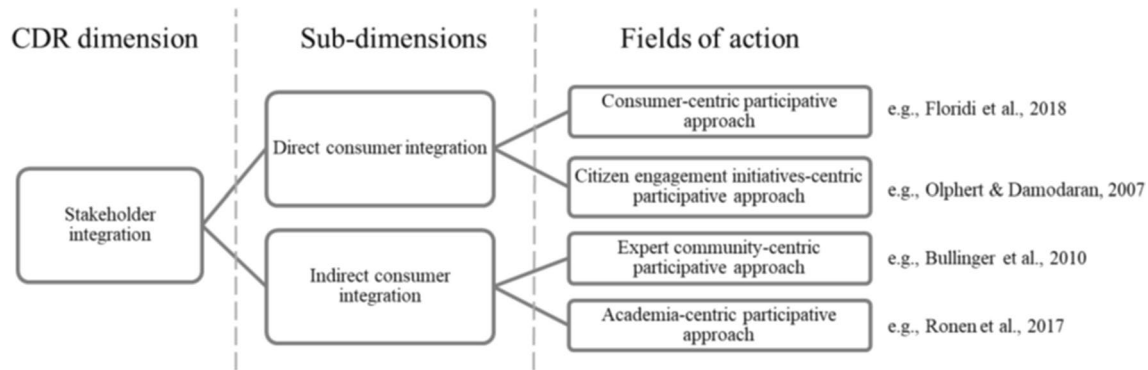
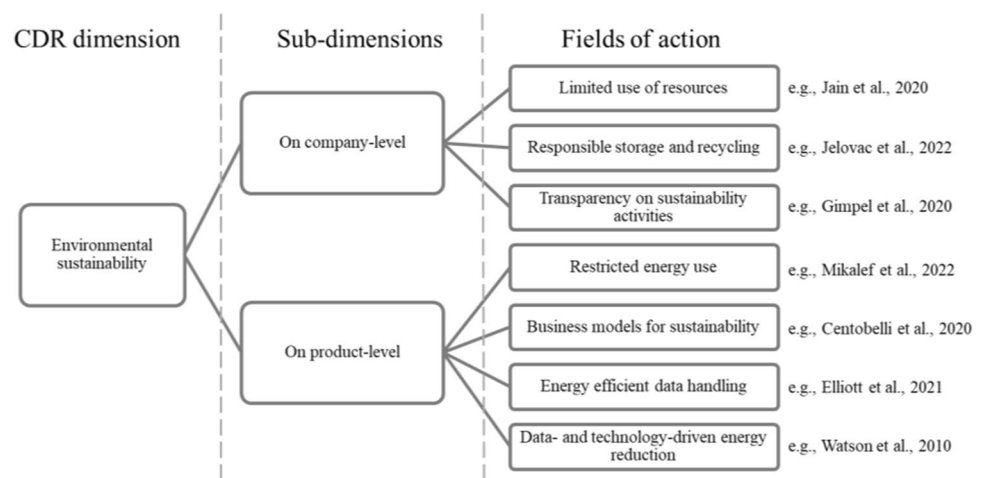


Fig. 9 Stakeholder integration sub-dimensions, related fields of action, and exemplary references (See Table A.2 (Online Appendix) for a detailed overview)

Fig. 10 Environmental sustainability sub-dimensions, related fields of action, and exemplary references (See Table A.2 (Online Appendix) for a detailed overview)



sustainable corporate behavior affects consumers as well as the society as a whole. Furthermore, digital technologies can directly contribute to more environmentally sustainable processes and behavior, e.g., by optimizing the usage of resources in production processes. Thus, environmental sustainability considerations of companies benefit consumers, therefore being a vital aspect of CDR considerations directed at consumers. The CDR dimension of environmental sustainability covers two corresponding sub-dimensions with activities (i) *on company-level* and (ii) *on product-level* (see Fig. 10). On company level, companies can foster a limited use of resources (e.g., energy-saving measures for training AI-based customer support systems), responsible storage and recycling strategies, and can provide a high level of transparency regarding company-wide environmental sustainability activities (e.g., online). Particularly the digital context allows for an intensive communication of according corporate activities online. On product level, companies can ensure a restricted energy use of the designed products,

services, and technologies in operation (e.g., by limiting the energy consumption of smart speakers). Besides, business models for particular products can support environmental sustainability (e.g., regarding the sharing economy). When collecting and processing data, companies can opt for environmental friendly and efficient solutions to limit energy use as well as employ the collected data and developed technologies to promote energy reduction (e.g., personalized recommendations on how to save energy).

Internal permanence schemes

The dimension addressing *internal (consumer relevant) permanence schemes* should motivate companies to establish internal mechanisms that additionally protect consumers' interests by entrenching compliance with other CDR principles. In this way, this dimension depends on the further CDR dimensions and should strengthen current efforts in the long term by adapting company-internal strategies, mechanisms,

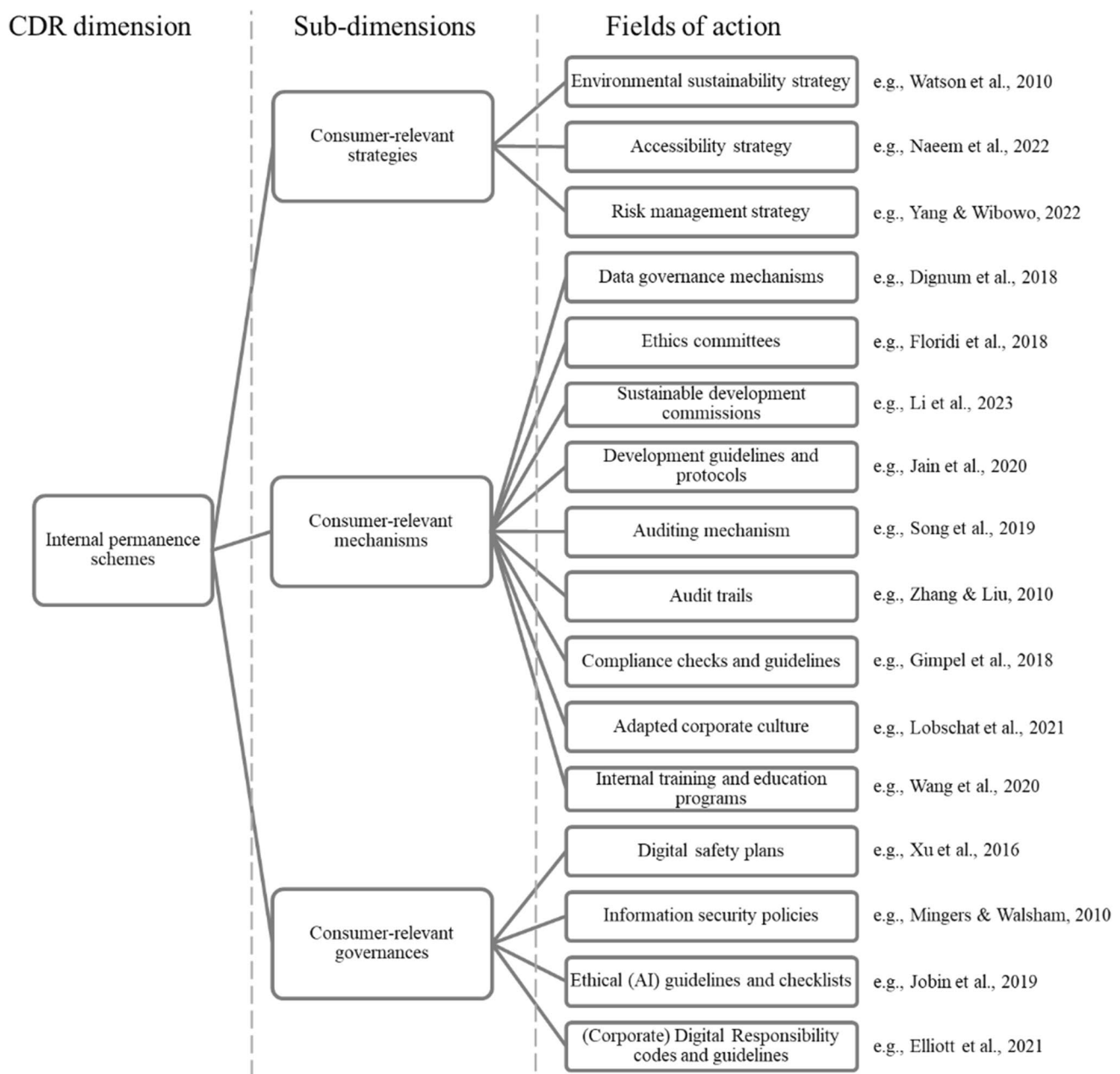


Fig. 11 Internal permanence schemes sub-dimensions, related fields of action, and exemplary references (See Table A.2 (Online Appendix) for a detailed overview)

and governances. Corresponding internal structures aim to solidify CDR activities in terms of different CDR dimensions by adapting company-internal workings and creating awareness. As for the offline context, such structures further establish corporate responsibility activities. However, compared to the offline context, the scope and foci in this dimension differ from responsibility activities manifested in such structures in the offline context. By communicating and publishing these permanence schemes, which is particularly feasible online, companies empower consumers to

make better-informed judgments about company-internal processes and decisions according to their personal preferences and evaluations. The dimension related to internal (consumer relevant) permanence schemes contains three sub-dimensions: (i) *consumer-relevant strategies*, (ii) *consumer-relevant mechanisms*, and (iii) *consumer-relevant governances* (see Fig. 11). Consumer-relevant strategies summarize different strategic approaches solidifying activities in further CDR dimensions like environmental sustainability, accessibility (e.g., for different digital literacy

levels), and risk management strategies (e.g., regarding the implementation and use of automated systems). Consumer-relevant mechanisms aim at manifesting CDR activities employing different mechanisms, committees, protocols, and ultimately an adapted corporate culture supporting responsible corporate behavior in the digital context. Finally, consumer-relevant governances should provide guidance for corporate behavior formalizing anticipated behavior in further CDR dimensions, e.g., regarding digital safety (i.e., mental safety), information security, ethical AI, and CDR in general.

Transparency

Transparency is an underlying principle of CDR and enables the transfer from inner workings and principles to externally perceptible activities. Thus, transparency is a fundamental principle of CDR and is applicable to most dimensions, sub-dimensions, and fields of action. There is always a certain asymmetry of information between companies and external stakeholders, which can be reduced through communication and transparency. Accordingly, transparency plays an important role in the understanding of CDR, since it is only through transparency that the responsibility assumed and the corresponding implications are conveyed to the outside world. In particular, the digital setting allows for a high degree of transparency and additional mechanisms that support consumers in gaining adequate information, potentially even according to their individual wishes and needs. The digital context is known for the double-edged sword of information ranging from a too low level of transparency to information overload. Thus, especially in the digital setting and in case of more complex electronic markets and supplier networks and their interaction, it is crucial for consumers to have a high level of transparency and adequate information available while not being overwhelmed by the amount of information provided.

The dimension overlaps in many ways with the other dimensions, sub-dimensions, and fields of action, and is therefore treated here as an overarching principle. In part, it is only through transparency that stakeholders benefit from internal activities. Some of these particularly prominent aspects of transparency have already been addressed in the individual dimensions. Thus, in this conceptualization of CDR, we treat transparency as overarching principle with fundamental overlaps with the further nine dimensions, thus highlighting these overlaps in the particular dimensions. Accordingly, no sub-dimensions or fields of action are assigned to this dimension of CDR. Rather, for better comprehensibility, these are listed in the respective thematically linked dimensions and transparency forms the overarching principle.

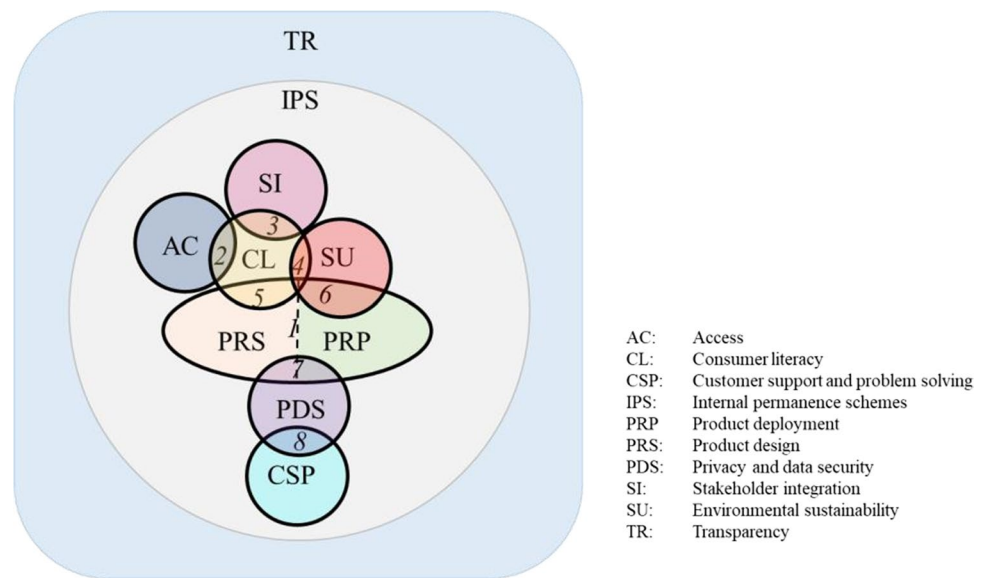
Aggregating the dimensions towards a conceptual understanding of CDR

In the first place, the obtained publications provide evidence that the facets of CDR are not new to IS or electronic markets research nor to the top journals in the discipline. In the last decades, a considerable number of publications addressed corporate responsibilities linkable to the concept of CDR, recently some publications even directly referred to the concept. By inductively analyzing the publications derived from literature search, this study enables a deeper and structured understanding of the concept of CDR and its scope. When developing a conceptual systematization of CDR, our results suggest that one can adhere to the following components of CDR according to prior research: (AC) *access*; (CL) *consumer literacy*; (CSP) *customer support and problem solving*; (IPS) *internal permanence schemes*; (PRS) *product design*; (PRP) *product deployment*; (PDS) *privacy and data security*; (SI) *stakeholder integration*; (SU) *environmental sustainability*; and the overarching principle (TR) *transparency*. Although the dimensions are distinct and delimitable from each other, they overlap or influence each other in some respects besides the comprehensive dimension of internal permanence schemes and the overarching nature of transparency (see Fig. 12).

The two dimensions product design and product deployment are rather transcending since design decisions also influence usage features that gain importance in the deployment phase. Some activities in the design of a product or service have implications for the deployment of the product or service. Thus, the line (1 in Fig. 12) between product design and deployment is blurred. Distinguishing between these dimensions relies on the foci of a company's activities and the primary situating in one of these two phases. However, in both directions, activities are not easily delimitable but rather influence each other vice versa. For example, total cost of ownership (i.e., product deployment) can influence decisions in the product design (e.g., core product features). In the other direction, core product features (i.e., product design) such as anticipated life span also influence usage characteristics (i.e., product deployment) such as patch release behavior. Nevertheless, considering these dimensions separately ensures emphasis on the different phases from product design to deployment so that we conceptualize them individually.

One related overlap (2 in Fig. 12) refers to the dimension of access. Access coincides with consumer literacy related to safe access to digital technologies, markets, products, and services—in the interest of inclusion of different user groups (e.g., with disabilities, elderly, less educated). Activities in terms of consumer literacy as well as access should allow more people to safely operate digital products, services, and

Fig. 12 Aggregation of the ten CDR dimensions, transparency, and their overlapping (Sizes, shapes, and vertical arrangement are for illustrative purposes only and are not intended to allow any conclusion about how important, large, or superior any of the dimensions are in CDR.)



technologies. User development as one important aspect of consumer literacy aims at empowering more potential users and strengthening their mental capabilities. In combination with the lowest possible requirements for mental capabilities (i.e., access dimension), such activities enable a broader mass to seize the chances of electronic markets and their digital products, services, and technologies. Both dimensions illuminate these fields of action from different points of view and with different foci and approaches for companies. Accordingly, such a nuanced consideration helps research and practice to gain a sophisticated understanding of the CDR scope. Therefore, it is reasonable to consider the dimensions separately despite overlaps and influences.

The dimension of consumer literacy is also overlapping (3 in Fig. 12) with the dimension of stakeholder integration as both share consumer development. While consumer literacy directly emphasizes the aspect of user development (e.g., in terms of skills) as a company's responsibility, this development is a subsidiary effect of the stakeholder integration dimension. Enabling consumer-centric participation approaches often lead to consumers' skill development as side effect. Consequently, there is a small overlap between these two dimensions. Still, both dimensions have different foci, thus accounting for a separate conceptualization of the dimensions.

Furthermore, the dimension of consumer literacy overlaps with the dimension environmental sustainability (4 in Fig. 12). Consumer literacy should raise awareness, inter alia, for ecological consequences of consumption decisions. Accordingly, this dimension raises awareness of activities and their relevance in the context of the environmental sustainability dimension. Consumer literacy enables a better understanding, on the one hand through the creation of awareness, but also user development in the sense of skills.

On the other hand, increasing corporate activities in the dimension of environmental sustainability contribute to raising awareness concerning ecological consequences of consumption decisions. Thus, both dimensions overlap and influence each other in both ways. However, consumer literacy exceeds environmental sustainability-related activities by far, requiring the separate consideration of both CDR dimensions.

Further dimensions overlapping with consumer literacy are product design and product development (5 in Fig. 12). Especially product characteristic-related awareness and its impact coincide with the dimensions of product design and product deployment. Besides, awareness for the deployment of automated systems (i.e., dimension of consumer literacy) might influence consumer demand for the comprehensibility of automated decisions (i.e., product design). Increased awareness can possibly lead to systems being recognized as automated in the first place and thus create the need for further explanations of the decisions. Thus, in some instances, the three dimensions overlap and influence each other. Still, their scope exceeds these mere influences, therefore conditioning separate consideration.

The dimensions of product design and product development also have some overlap with environmental sustainability (6 in Fig. 12). For example, core product features (e.g., product design: life span) or usage features (e.g., product deployment: resource consumption) and according utilization of resource can have an important influence on overall environmental sustainability. Thus, core product or usage features enabling more environmental sustainability have strong overlaps with environmental sustainability on product level. However, to emphasize the relevance of environmental sustainability activities in the product design and deployment, both dimensions require attention on their own.

Moreover, product design and product deployment go far beyond environmental sustainability considerations and both dimensions take a different view of such measures. In order to emphasize their importance and to generate attention for them at various positions in companies, the three dimensions are considered separately despite the overlap.

Furthermore, product design and product deployment overlap with privacy and data security (7 in Fig. 12) in regard to access to services or products without data input (i.e., one field of action in terms of usage features). Such access addresses consumers' privacy concerns when requiring (non-necessary) data sometimes even before the actual usage of the product or services, e.g., for insurance premium calculators or setting-up a printer. Allowing access without the input of highly personal data (e.g., name, age, contact information, medical data) when not absolutely necessary contributes to privacy and data security by further limiting collected data and preventing any issues with storage and processing of these data. Thus, such considerations are essential in the product deployment process when specifying required data for usage. Besides, the sub-dimension safety (i.e., product design) can have some overlap with privacy and data security in terms of mental safety as a consequence of data security incidents. The digital setting conditions overlap; however, all dimensions cover broader areas than these overlaps and require dedicated attention. Thus, these dimensions should be considered separately.

Privacy and data security also overlaps with customer support and problem solving (8 in Fig. 12). In a digital setting, a considerable amount of dispute cases traces back to collected data and accordingly overlap with this dimension, e.g., in the case of incidents regarding privacy and data security and (unexpected or unwanted) data usage. Besides, liability and redress also overlaps with privacy and data security as such incidents can have consequences related to a company's liability. Still, these intersections only occur due to the fact that—more pronounced than in a mere physical world—liability issues also comprise incidents concerning privacy and data security. Nonetheless, the scope of the customer support and problem-solving dimension goes far beyond such incidents and related complaints and establishes this component of CDR as a separate dimension for accentuated consideration.

Besides, the dimension of internal permanence schemes depends on the further eight dimensions (see Fig. 12). Internal permanence schemes ensure the perpetuation of the commitment towards consumers within the company and leading to a more pronounced and sustainable protection of consumers' interests. Accordingly, this dimension lays a foundation for the long-term implementation and solidification of a company's CDR commitment. Nevertheless, such a consideration of corporate activities that favor consumers' interests is meaningful and important to ensure a sustainable

corporate commitment. Besides, companies can use documents, strategies, and mechanisms covered by this dimension to communicate corporate actions to consumers.

The overarching principle of transparency overlaps with all further nine dimensions since transparency makes activities in the other CDR dimensions visible to the outside. Hence, there are considerable overlaps with all CDR dimensions. Nevertheless, transparency is an important cornerstone of CDR commitment and should be considered in the context of each of the nine dimensions. Thus, transparency in this conceptualization occurs as another dimension, however with an overarching character, to ensure the necessitated emphasis on communicating company internal activities and the attempt to make them assessable for external stakeholders.

Summing up, when conceptualizing CDR, results suggest that some dimensions do not distinguish sharply from one another, but a subdivision nevertheless serves to provide a more nuanced view and greater awareness of the various forms of corporate engagement, providing different viewpoints on the distinct fields of action. Accordingly, this detailed consideration of the dimensions of CDR is useful for a comprehensive, structured, and easy understanding of the scope of the concept.

Assessing the derived results in a quantitative manner reveals increasing research interest in corporate responsibilities summarizable under the concept of CDR. Since the beginning of the 2000s, research in this area has been increasing except for a few years (e.g., in 2013). While in the early 2000s, an average of four publications of this sample dealt with assignable issues; there were 24 relevant publications in 2021 and even 27 in 2022. For 2023, we found only 16 relevant references. However, due to the search strategy, we were mainly able to assess publications derived in the forward search phase, since the citation of publications from 2023 is just about to commence, therefore indicating strong research interest. The increasing research interest highlights the timeliness of the topic in research, however, also indicating the relevance for practice and the urgency to consider CDR in corporate conduct. These results underline the increasing importance of corporate responsibilities in the digital setting, exceeding mere economic considerations of companies.

When assessing the publications according to their outlet, for most CDR dimensions, the rising trend of conference publications proceeded the significant rise in journal publications. For example for the dimension of product design, conference proceedings significantly raised in 2017 to 2019 (from zero to six publications per year) while increasing in journals particularly from 2020 to 2021 (from seven to 18 publications per year). The same applies to the dimension of consumer literacy: Conference publications significantly increased between 2017 and 2019 (from zero to three publications per

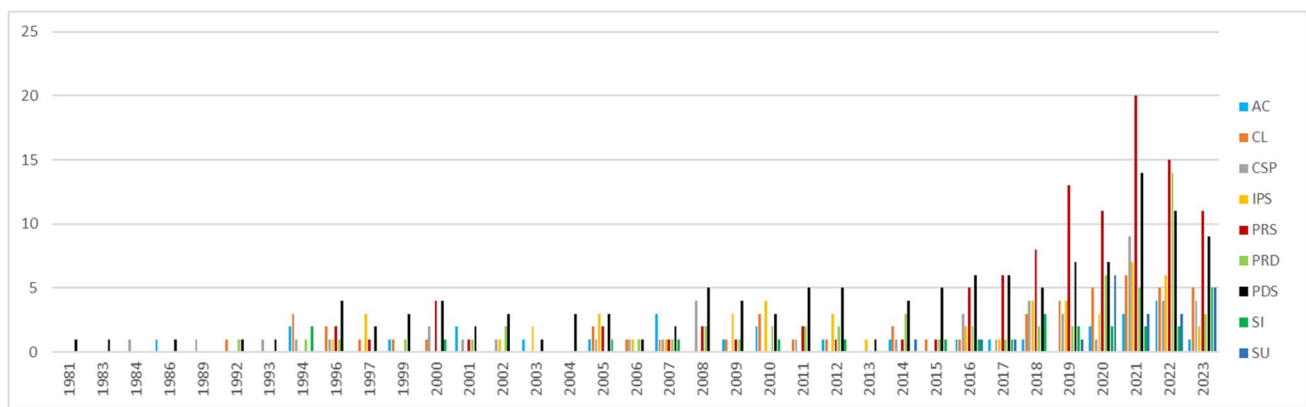


Fig. 13 Quantity of publications per dimension by year

year), followed by a significant rise of journal publications from 2019 to 2022 (from one to five publications per year). For internal permanence schemes, the same impression of fashion waves materialized, conference proceedings indicating increasing attention from 2017 to 2020 (from zero to three publications per year), followed by an increase of journal publications between 2020 and 2022 (from zero to six publications per year). Still, due to the forward search concentrating on journal publications, conference proceedings present a rather low share of the derived results as many concepts behind conference papers are further developed in journal articles, which in turn are preferably cited by journal papers (see Appendix Table A.1 for further details on the distribution of outlets overall and over time).

Another slight trend materializes when evaluating the derived publications: The average number of (simultaneously) covered sub-dimensions increases. In this way, publications follow a broader approach to corporate responsibilities lately. However, in 2023, publications covered in average 2.81 dimensions out of nine concrete dimensions, slightly increased in comparison to 2022 with 2.37 dimensions. An approach like CDR can thus enhance the comprehensive understanding of emerging and intensifying corporate responsibilities. Future research could incorporate an increasingly broader approach to the subject, considering more aspects of corporate responsibilities simultaneously.

When assessing research interest on the dimension-level (see Fig. 13, Tab. A.1 (Online Appendix)), the results support the impression that privacy and data security is an important topic in research. This dimension is the most covered dimension of CDR with a total of 130 publications that have addressed it. Research interest was stable over the years but intensified recently. The dimension of privacy and data security is closely followed by product design with 108 relevant publications. This dimension became increasingly visible in research, especially gaining momentum since 2016.

This is mainly due to the increasing interest in responsible AI, which provides the most prevalent contribution to this dimension. Surprisingly, the least researched dimension of CDR in this particular set of publications is environmental sustainability with only 21 relevant papers, followed by stakeholder integration (26 relevant publications) and access (29 relevant publications). These results are rather surprising due to the importance of environmental sustainability especially in the digital setting. Emerging technologies have potentially negative environmental sustainability implications due to their high energy consumption, while at the same time advancing digital technologies have the capacity to support more environmentally sustainable behavior. However, in the sample studied, this dimension of CDR was less explored, suggesting the importance of including such aspects in future research efforts. Still, in the last years, research interest in environmental sustainability increased, particularly visible since 2020. The increasing importance also applies to the dimensions of stakeholder integration and access to prevent a widening digital divide and digital technologies, products, and services that match key stakeholders' preferences and abilities. While research interest for both dimensions is rather stable over the years, the number of publications addressing aspects of these dimensions is comparably rather low. Still, since 2022, an increasing number of publications address stakeholder integration, indicating a rising research interest in the last years, whereas the research interest related to the dimension of access rose from 2019 to 2022, again decreasing in 2023. Nevertheless, for both dimensions, research interest in the last few years was at a comparably higher level than for these dimensions before, indicating increasing scholarly attention for both dimensions despite the overall lower visibility compared to other CDR dimensions. Especially surprising is this observation in case of access, since research on the digital divide is a salient issue in IS research.

Table 2 Future research agenda

Avenue	Our results	Future research
1. Employing the comprehensive concept of CDR	<ul style="list-style-type: none"> Increased visibility for responsibility commitment and its manifestations in the digital context Contribute to ensuring benefits for all affected stakeholders Promote a comprehensive view on responsibilities in the digital setting 	<ul style="list-style-type: none"> Build on the derived concept scope and employ the broader perspective of CDR especially in electronic markets research Assess the comprehensiveness of the derived (theoretical) CDR scope in practice Evaluate implications of the use of such a holistic concept in practice
2. Research on overlaps and influences between dimensions	<ul style="list-style-type: none"> Illustrate that only few publications cover a majority of the CDR dimensions at once (see Table A.1) Underline the necessity for research on the overlaps of and influences between the derived CDR dimensions, adopting a less isolated perspective 	<ul style="list-style-type: none"> (Empirically) evaluate possible influences of activities in several dimensions on the external perception of activities respectively responsibility commitment in further dimensions Build on the derived scope when assessing potential impacts of dimensions on another
3. Research on overlaps and influences on sub-dimension- and field of action-level	<ul style="list-style-type: none"> Especially activities in related sub-dimensions and related fields of action within one sub-dimension potentially influence each other in the external perception, thus requiring a contextualization More isolated research on distinct aspects of CDR (see Table A.2) Highlight the need for endeavors that focus on overlaps and influences on sub-dimension- and field of action-level 	<ul style="list-style-type: none"> (Empirically) examine contradicting, enforcing, or independent fields of action respectively sub-dimensions and assess their potential influences on another Quantify the direction as well as the strength of such influences to guide companies in the practical implementation of CDR
4. Complementary research on yet less researched dimensions, sub-dimensions, and fields of action	<ul style="list-style-type: none"> Quantitative assessment of research popularity as well as detailed information on popularity of CDR dimensions, sub-dimensions, and fields of action in the Appendix Table A.2 Illustrate the necessity to complement and inform research on CDR 	<ul style="list-style-type: none"> Assess which aspects of CDR are yet underresearched and contribute to a more sound understanding of particular facets of CDR Examine yet less researched dimensions, sub-dimensions, and fields of action to lay the foundation for research on CDR as a concept
5. Expand the understanding of research relatable to CDR interdisciplinary and integrate it in IS and electronic markets research	<ul style="list-style-type: none"> Provide a sound understanding of CDR-relatable research in the field of IS and particularly electronic markets research Resulting in a systematization of the concept scope embedded in IS research 	<ul style="list-style-type: none"> Develop a discipline-specific understanding of the concept and its scope in further disciplines (e.g., ethics, computer science, marketing) employing a comparable approach Eventually enable an interdisciplinary understanding by aggregating the domain-dependent reviews on CDR
6. Concretize the concept in the light of different technologies and application scenarios	<ul style="list-style-type: none"> (Deliberate) technology- and application-independent review Automated systems and their design requirements are most prevalent in the dimension product design, lacking focus on further intrusive application scenarios Underlining the necessity to assess further intrusive technologies and application scenarios independently, potentially determining different design and deployment specifications 	<ul style="list-style-type: none"> Assess CDR in the light of particular technologies or application scenarios besides following a general, technology-independent approach For practice, focusing on specific technologies or application scenarios to facilitate the implementation of CDR

When assessing the results on sub-dimension- and field of action level, we can observe that many publications only selectively address individual sub-dimensions or fields of action. Only few assessed conceptual overlapping between sub-dimensions and fields of action (see Tab. 2 (Online Appendix)). One exception is the dimension of privacy and data security. Many publications within this dimension have a very broad understanding of the topic and cover several of these sub-dimensions or fields of action simultaneously (e.g., Greenaway et al. 2015; Wiener et al. 2020). This also applies to access: Here, too, some publications already pursue a broader view of the subject (e.g., Díaz Andrade and Techatassanasoontorn 2021; Olphert and Damodaran 2007). Whereas in the dimension of product deployment, the respective sub-dimensions and fields of action are rather scattered and publications mostly address only one field of action. One exemplary exception is the publication by Xiao and Benbasat (2011), which, however, also focuses exclusively on one sub-dimension of product deployment and, accordingly, represents only a very specific consideration of individual, few aspects of this dimension. This reinforces the need to establish the concept of CDR in research despite the many insights we can already draw from isolated, prior research in IS and electronic markets. This is the key to promoting a comprehensive view on corporate responsibilities, thus ensuring a less scattered and more comprehensive understanding of the concept. In practice, corporate responsibility does not take place in isolation, but rather in an interconnected way. Hence, future research endeavors should accept a comprehensive approach to corporate responsibilities in the digital setting. In this way, we can assess the influences, halo, and overshadowing effects of different activities on another. To provide a more holistic and comprehensive understanding of corporate responsibilities in the digital context, research can employ the concept of CDR to take a broader perspective on these responsibilities. Otherwise, there is a danger of more disconnected, isolated research on specific issues arising in the digital context. Taking a broader perspective enables research to investigate the interplay of different CDR dimensions, sub-dimensions, and related fields of action, to map corporate practices adequately, and to foster technology for humanity.

Despite the need for research on the interplay of different aspects of CDR, we also need a sound understanding of each dimension, sub-dimension, and an assessment of potential influences of fields of action within one sub-dimension. However, one prerequisite for such an evaluation is the deep understanding of individual fields of action. Here, too, there is an imbalance in the distribution of previous publications addressing these areas (e.g., accessibility strategies, awareness for revenue generation, subject of support, and digital safety plans). Since the developed approach aims at a similar importance and not a hierarchy of individual dimensions,

another important goal for future research is to target so far less researched fields of action and to contribute to a holistic understanding of the topic. In this way, research can simultaneously pursue an isolated view on the specific dimensions, sub-dimensions, and fields of action in favor of a sound CDR understanding. In addition to a holistic view and deployment of the concept, this is another important research field for the future. However, the developed systematization should not serve as a rigid scheme for future research. A plethora of potential activities apply to the understanding of CDR, thus allowing for further amendments in the future and the evaluation whether such activities can be subsumed under the umbrella concept of CDR. With further advancements in technologies, new challenges and risks can arise that require scholarly and practical attention from the viewpoint of CDR. Thus, future research should constantly add to the understanding of the scope of CDR. Table 2 summarizes future research avenues revealed through the conducted ExSLR.

Discussion and conclusion

Extant literature suggests that companies (e.g., platform, product, or service providers) and consumers alike already face the opportunities and risks of digitalization in their daily life (e.g., Spiekermann-Hoff et al. 2021). Consequently, corporate responsibilities in the digital era evolve to ensure technologies benefitting humanity. A comprehensive understanding of corporate responsibilities (Mihale-Wilson et al. 2022) and how to foster ethical behavior in the digital context (Spiekermann-Hoff et al. 2021) are prerequisites for pursuing technology for humanity and ensuring social and human value creation. In this context, the concept of CDR gains traction in research and practice alike (Lobschat et al. 2021). Despite the novelty of the concept of CDR itself, a profound amount of prior research already addressed corporate responsibilities in the digital context, at least partly. Hence, it is of tremendous importance to link prior research to the concept of CDR to inform the conceptualization of CDR, pave the way for future research, and to enhance the in-depth, structured understanding of CDR and its scope. Consequently, this research endeavor pursues technology for humanity and the adequate addressing of ethical questions and threats induced by the rapid digitalization. To answer the posed research question, this study developed a systematization of prior research relatable to CDR, aggregating its dimensions towards a further conceptualization of the concept. In addition, the results offer an approach to more comprehensively understood responsibilities compared to the disconnected and dispersed consideration of individual standalone values.

In this way, this study makes several theoretical and practical contributions. Firstly, this study contributes to

the existing research base on ethically desirable corporate conduct and how to address threats induced by digitalization by linking it to the concept of CDR, thereby supporting responsible electronic markets. In the context of electronic markets, CDR applies to different companies, e.g., platform, product, or service providers. This publication enables a deeper understanding of corporate responsibilities in the digital setting by synthesizing prior knowledge in the discipline on how to benefit such behavior. As a result, this study favors technology and market development and deployment with a focus on social and human value creation, also contributing on how to address threats in a digitalized world adequately. In this context, this study also contributes to the emerging research base on social sustainability at the intersection with digitalization and digital transformation. Social sustainability in this context faces the challenge of a highly dispersed research field with yet mostly isolated research (e.g., Kneissel et al. 2023; Schoormann and Kutzner 2020). This publication can contribute to the micro-level knowledge base (Schoormann and Kutzner 2020) on social sustainability in a digital world by aggregating prior research concerning company activities directed at consumers (i.e., the individual level) that can support social sustainability. This study particularly contributes to specific aspects of social sustainability like health and safety (e.g., ensuring mental and physical safety), education (e.g., developing digital literacy), and equity and equality (e.g., non-discriminating automated systems, equal access to digital artefacts) (e.g., Ajmal et al. 2018; Eizenberg and Jabareen 2017; Kneissel et al. 2023). Thus, our work can also support future research on social sustainability by aggregating literature that is relevant for this research field as well. Furthermore, this publication adds to the emerging research base on social innovation that captures innovation that is used to address social problems (van der Have and Rubalcaba 2016). Incorporating responsibilities according to the concept of CDR can lead to innovation fostering the diminishment of social problems. Yet, this research field is rather scattered, too (van der Have and Rubalcaba 2016). Thus, the comprehensive, developed approach to CDR can support research endeavors in terms of social innovation as well.

Secondly, this study's results corroborate that research on corporate responsibilities in the digital context is not new to IS or electronic markets research, nor its top-ranked journals. Rather, subsuming these yet isolated principles under the umbrella of CDR is rather new to IS and particularly in the context of electronic markets, thereby adopting a more comprehensive perspective on ethically sound behavior in the digital context. Still, condensing such knowledge under one umbrella term like CDR can enable research and practice to comprehend the interplay of different aspects of responsibility in the digital context (Trier et al. 2023). Only few publications in the sample directly refer to the context

of CDR (e.g., Yang and Wibowo 2022). In this way, this study uncovers what we already know in IS and particularly electronic markets research that is relatable to the concept of CDR and synthesizes prior knowledge in the discipline summarizable under the concept. Future research can build on the derived findings and the inductively developed scope of the CDR concept to further pursue research on corporate responsibilities in the digital setting and especially research relatable to CDR in IS and electronic markets research. This should further anchor the concept of CDR in the context of electronic markets as well as IS research in general in the long run and pave the way for new research paths in future, besides being an important step towards an interdisciplinary understanding of CDR.

Thirdly, the examined research base proofs the importance of the responsibilities covered by CDR and the need to establish CDR and an ethically sound approach to technologies in research and practice. Especially increasing research interest in the last few years underlines the timeliness of such an approach (e.g., Trier et al. 2023). Research related to CDR is highly dispersed; however, rapid digitalization and the resultant ubiquity of electronic markets requires a more comprehensive understanding compared to researching standalone values (e.g., Spiekermann-Hoff et al. 2021). Yet, some publications cover several dimensions of corporate responsibilities in the digital context simultaneously (e.g., Nussbaumer et al. 2023; Ransbotham et al. 2016; Son and Kim 2008; Xiao and Benbasat 2011) but not all of them yet. This finding suggests that research needs a more comprehensive understanding of corporate responsibilities in the digital era and the ethical assessment of technologies contributing to a world in which humans thrive from technologies. Yet, the research landscape is rather scattered, not accounting for reality where activities and responsibilities do not occur in isolation but rather influencing and depending on another. A more holistic, comprehensive approach to the subject matter better reflects reality where consumers and other stakeholders form one perception of a company, depending on the wide range of CDR activities that companies can pursue. Since CDR activities have the ability to influence consumers' perception of the company and correspondingly consumption decisions (e.g., Edinger-Schons et al. 2020; Schreck and Raithel 2018), such a more holistic understanding can contribute to better reflecting reality in research and finally better matching consumers' needs and demands when implementing CDR activities driven by extrinsic motivation, the most prevalent motivational source in practice (Carl, Kubach, et al. 2023). Still, isolated research on specific aspects of responsibilities, like privacy (e.g., Bélanger and Crossler 2011), are an important basis and starting point, but are not sufficient for a broader, linked understanding to adequately support technology benefitting humanity. Besides, the results and aggregation of dimensions towards

a conceptualization of CDR provide evidence for some overlap between several dimensions. This emphasizes the need for a more comprehensive approach to corporate responsibilities in the digital world. In this way, this publication should motivate future research incorporating a broader view on corporate responsibilities in the digital setting.

Fourthly, to the best of knowledge, there is no systematic research on the scope of CDR on the meso-level yet despite the call in research for a more nuanced understanding of the scope of the concept (e.g., Mihale-Wilson et al. 2022; Mueller 2022). While first publications assess digital responsibility on a meta level (e.g., Trier et al. 2023), there is a lack of an in-depth systematic approach also covering the meso level of CDR. The more concrete understanding of the concept contributes to research in several ways. It expands our understanding and discussion of the scope of the concept so that conceptualization can progress. Besides, it allows employing key insights already achieved in previous research by linking them to the novel concept of CDR and thereby putting them into context. In this way, this research attempts to strengthen the scholarly debate and to enhance the conceptualization of CDR as a concept, aiming at supporting the development of technology benefitting humanity. The conducted ExSLR informs the scope of CDR, its dimensions, and sub-dimensions, also benefitting the discussion on ethically sound behavior of companies in the digital era. The aggregation of dimensions towards a conceptualization of CDR allows for a better understanding of the concept's interacting constituents and enhances conceptualization efforts in research. This study paves the way for technologies benefitting humanity by providing a comprehensive overview of CDR dimensions, sub-dimensions, fields of action, and their interplay, thereby strengthening the structured understanding of the concept. In this light, the developed classification scheme can serve as a starting point for further research activities in the context of CDR and the assessment of technologies by guiding and informing future research.

Finally, by inductively developing an initial classification of responsibilities into ten dimensions, corresponding developed sub-dimensions, and related fields of action, this study also advances the present conceptualization of CDR in its depth, following the call for articulating concrete frameworks of CDR in research (Mihale-Wilson et al. 2022). The employed grounded theory literature review method enables us "to advance the depth and breadth of an academic niche" (Wolfswinkel et al. 2013, p. 46), in this case the concept of CDR. The developed systematization guides and enhances the further conceptualization of CDR, also benefitting future research: This systematization of prior research related to CDR unfolds research areas that still lack attention. In this way, this study follows the attempt of knowledge building by proposing future research avenues based on the synthesized

knowledge (following Schryen et al. 2020). Research on less covered research fields is of tremendous importance for the further conceptualization of CDR and a more comprehensive understanding of obligations for ethically sound corporate conduct. Research must also develop a profound understanding of partial aspects of CDR so that the concept itself can develop further in research. Ultimately, this study should guide and motivate future research to further enhance the conceptualization of CDR and yet underexamined related research areas for the sake of a more comprehensive and holistic understanding of corporate responsibilities in the digital era, thus the evaluation of corporate behavior in general. In this way, this study should benefit the development of technology for humanity.

Apart from theoretical contributions, this study could also support corporate practice. Yet, no in-depth understanding of the scope of CDR and its concrete fields of action exists despite the call for this very research (Mihale-Wilson et al. 2022). This study contributes to addressing this gap by delivering an orientation for firms concerning the scope of the concept and provides an aggregated, easy access to the emerging concept scope of CDR, potentially guiding managers in coping with the challenges of digitalization while at the same time exploiting corresponding opportunities. Especially providing a structured overview on fields of action related to CDR eventually enhances the implementation in companies as it provides a concrete, actionable understanding of activities subsumed under CDR. The advanced conceptualization eases the implementation of CDR in practice by enhancing the (structured) conceptual understanding of CDR. Consequently, this study can inform the decision-making process on the scope of CDR activities, fostering the development of technologies benefitting humans.

Despite best efforts, this study is not without limitations. Firstly, this research focuses on one specific stakeholder group as an addressee of CDR activities. To provide a comprehensive and reliable understanding of the scope of CDR, this focus is necessary. Nevertheless, this research should motivate future research to develop corresponding approaches and reviews for other stakeholder groups like employees, shareholders, and suppliers. Secondly, the conducted search only includes papers published or referenced in IS and electronic markets research. This study's goal is to provide an overview of prior CDR-related knowledge in the IS and particularly electronic markets discipline and to distinctly motivate future research on CDR in this domain due to its inherent thematic fit (Mihale-Wilson et al. 2022). Besides, such a focus contributes to a sound foundation in this particular discipline, enabling future research on the concept as well as in an interdisciplinary manner. Thus, future research could build on this study and foster interdisciplinary research incorporating findings from other disciplines like ethics, computer science, and marketing

in the forward search to provide a more interdisciplinary understanding. Besides, evaluating an entire discipline is more than a single ExSLR could accomplish. As a starting point, this study concentrated on the top outlets in IS and EM research. Accordingly, the outlet selection is one major limitation of this study. We opted for a basket-based strategy to integrate the most central publications in a first step, as established in IS research. Still, future research should target further, more practice-oriented IS publications in the forward search, contributing to a potentially broader and more practice-driven understanding of CDR. Thirdly, the ExSLR requires a fixed selection of keywords in the first search step. Accordingly, the results of such a study always depend on the selection of keywords. We deliberately chose a broad set of keywords to cover as many relevant publications as possible and to give a comprehensive picture of previous research in the light of a just emerging concept and, therefore, a lack of a common nomenclature. The broad set of keywords accounted for the high exclusion rate of publications in the process. However, the keywords rely on the assumed perception of the relation of CDR, CSR, and corporate responsibilities in general. As the conceptualization of CDR and its embedding in established concepts and ideas is progressing, such an assumption could change, conditioning the need to reassess the chosen keywords. Furthermore, we extended a classical SLR by incorporating an intensive backward search to account for the shortcomings of this methodology. Nevertheless, we want to encourage future research to extend our keyword set to develop a broader understanding of the topic in the first search step, especially in an interdisciplinary way (i.e., with a mostly differing nomenclature between disciplines). Fourthly, it is beyond the scope of one single publication to provide an all-encompassing overview of prior publications in such a dispersed and constantly evolving field like research on CDR-related topics. Rather, this study should benefit an enhanced conceptualization of the CDR concept, motivating future research to strengthen research efforts on this distinct topic. Finally, while the derived results have a primary digital core, some fields of action are also applicable and important in the offline context. We discussed the relevance of each dimension, sub-dimension, and field of action in the digital setting. Nevertheless, due to overlaps of CDR, for example, with the concept of CSR, some responsibilities overlap with responsibilities in the offline world, so that it is sometimes not possible to clearly delineate them. Accordingly, some responsibilities that are becoming increasingly important in the digital context are also relevant offline.

This study provides profound groundwork for the developing conceptualization of CDR in the context of electronic markets as well as IS research in general. The conducted ExSLR informs and guides future research providing a first in-depth and structured classification of the scope of CDR

and an aggregation towards further conceptualization. Our results suggest that IS research and particularly research on electronic markets provide a considerable knowledge base concerning CDR-relatable corporate activities, which we can draw on in future. Consequently, this work can serve as a starting point and motivation for future research, ensuring the development and deployment of technology and electronic markets that benefits humanity.

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