

CHAPTER 34

**GUIDELINE FOR CORPORATE DIGITAL
RESPONSIBILITY (CDR) IN
GLOBAL ENVIRONMENT**

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Abstract

The principle of corporate digital responsibility, or CDR, aims to address various ethical problems that companies face while developing digital technologies. As a result, this responsibility includes actions and behaviors that encourage businesses in making ethical, economical, and environmental use of digital technologies and data. This study proposed a guideline for organizations to create a corporate digital responsibility culture. This guide will provide the following benefits to companies: offer a roadmap for resolving unethical issues in the digital environment, build trust among users and relevant stakeholders in the digital environment, enhance the company's financial performance and competitive strength in the long run, improve the customer experience, reduce reputation risk and provide employees with ethical key performance indicators (KPIs). Guideline should include senior management's commitment to corporate digital responsibility practices, guidelines, process models, and workflows that support corporate digital responsibility, training provided to employees on digital literacy and responsibility, incentive mechanisms for corporate digital responsibility behavior, digital role definitions in teams and business units, auditors responsible for data security, algorithms, technology, and ethics, new technology solutions that support responsibility, transparency and clarity of customer privacy policies, limitations placed on employee access to customer data and collaborations with business partners on digital responsibility. Organizations must consider ethical issues when developing and implementing new technologies in order to practice digital responsibility.

Keywords

Digital Technologies, Corporate Digital Responsibility, Digital Culture, Ethics

Introduction

The emergence of digital technologies, such as blockchain and artificial intelligence, has catalyzed the digital transformation (DT) of enterprises, providing them with significant organizational capabilities for secure and consistent operations (Asokan et al., 2022). Digital transformation refers to the transition of companies from the industrialization phase to the Industry 4.0 smart factory phase, leveraging emerging technologies such as the Internet of Things, big data, robotics and blockchain to improve performance and competitiveness (Chen & Hao, 2022). The adoption of digital technologies implies significant changes in the way organizations operate and engage with their environment. The digitization of business can lead to the emergence of new business models or the rethinking of traditional commercial strategies, affecting the relationship between companies and their stakeholders (Scuotto et al., 2017). Today, transformative technologies such as IoT devices, 3D printing, and big data analytics are driving change that goes far beyond internal process improvements. These technologies have the potential to significantly disrupt business models, cultures and overall industry structures (Nadkarni & Prüggl, 2021).

Digital technologies that are designed to support or independently perform decision-making processes must comply with ethical standards and moral principles similar to those expected of human actions. Assuming that human behavior, at both the personal and collective level, is governed by ethical norms, it follows that the development, operation, evaluation and improvement of such technologies and their use of data must also be assessed against these moral guidelines (Lobschat et al., 2021).

In a more harmonious way, a concept that integrates digital, social and environmental concerns is gaining support, often referred to as corporate digital responsibility (CDR) (Arciniega & Ratnane, 2023). This rapid evolution of AI highlights the urgent need for CDR, with a particular focus on establishing accountability and preserving human agency. AI ethics is a critical component of CDR, as the ethical or unethical application of AI directly impacts a wide range of stakeholders, such as consumers, employees, partners within organizations, and society at large (Toth & Blut, 2024). There are two perspectives on CDR: First, it can be seen as a continuation of corporate social responsibility (CSR), involving similar commitments to society and sustainability. Alternatively, several compelling arguments support the notion of CDR as a distinct but interrelated concept from CSR (Mihale-Wilson et al., 2022). CDR is a voluntary commitment by organizations, acting as corporate citizens, to champion the interests of society. This commitment involves guiding “good” digital business behavior and promoting digital sustainability, including aspects such as data and algorithms, through collaborative advice to mitigate the social, economic, and environmental impacts of digital society (Elliott et al., 2021).

The purpose of this study is to identify the digital culture that companies need to have in order to fulfill their digital responsibilities and, based on this definition, to determine the characteristics of a digital culture guide that will meet the expectations of the company’s various stakeholders. For this purpose, the first part of the theoretical study examines the concepts of digitalization, digital technologies and digital transformation. It then examines the evolution and current conceptualization of corporate responsibility, given its close relationship with corporate responsibility. This is followed by a discussion of digital corporate responsibility, which is beginning to be considered as a new concept, including its differences from corporate responsibility, different definitions in different fields, and the establishment of a culture of digital responsibility and possible principles for this.

Digitalization and Digital Transformation

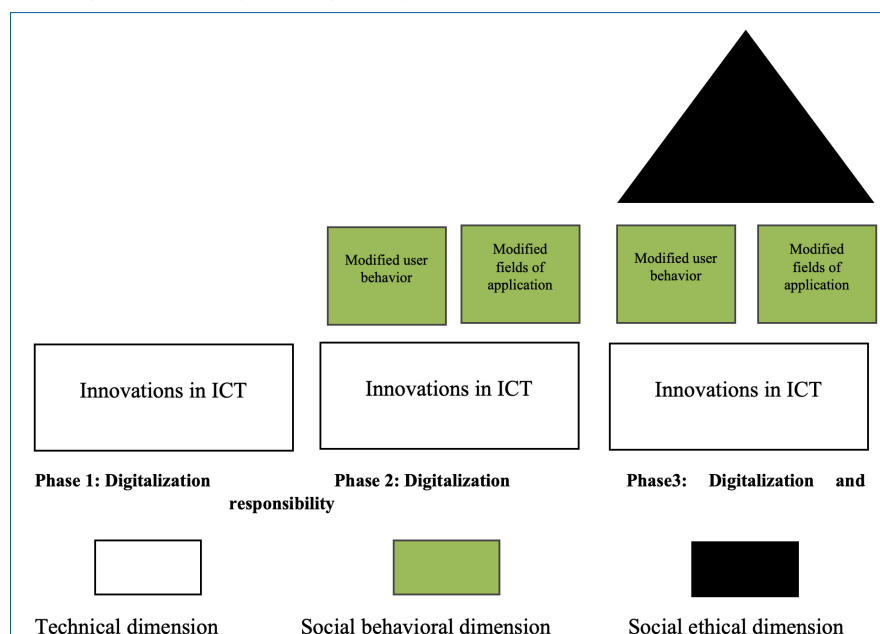
Digital transformation can be characterized as the strategic adoption of digital tools to augment and refine business practices to meet the evolving demands and expectations of customers and key stakeholders (Li, 2022). This process involves embedding digital solutions such as automation, artificial intelligence and data analytics into various facets of an organization’s activities, from marketing to supply chain logistics, and streamlining internal operations (Xu et al., 2023). The main objective of DT is to enhance operational efficiency, foster innovation, increase agility, and sharpen competitive edge, while improving the customer journey and strengthening stakeholder engagement (Matarazzo et al., 2021).

Digital transformation extends its impact far beyond economic boundaries, presenting new challenges and prospects in the areas of CSR and sustainability. It provides companies with the means to secure a competitive position in the rapidly evolving digital marketplace and to pursue sustainable growth (Mikalef & Pateli, 2017). This shift has the potential to reshape various aspects of CSR, potentially changing the way companies approach their social and environmental responsibilities. The emergence of digital innovations such as big data, the Internet of Things (IoT) and artificial intelligence (AI) has not only redefined our society, but also opened up new avenues for sustainable progress. With its widespread reach and inherently inclusive nature, digital technology has made economic participation more accessible, significantly reduced costs, and emerged as a central technological force in supporting CSR initiatives (Sun et al., 2024).

Digital technologies, also referred to as responsible digitalization (Cardinali & De Giovanni, 2022), help organizations improve their efficiency, reduce costs, save energy, increase profits and achieve greater sustainability (Khan et al., 2024). De Giovanni (2021) emerges as the only study influenced by the notion of responsible digitalization, while the existing literature mainly supports the use of digital technologies to improve a selective set of performance metrics, acknowledging the existence of certain trade-offs and the need to develop new digital competencies. Dalenogare et al. (2018) examine the dynamics between digital technologies and organizational performance, finding that no single digital technology can simultaneously enhance all aspects of performance. As a result, organizations must first identify their strategic objectives before selecting the appropriate digital technologies to implement. For example, while big data can significantly improve operational performance, it can have a negative impact on social performance indicators such as product customization, quality and time to market (De Giovanni, 2021). The concept of responsible digitalization helps organizations to lead the initiative of CDR, which Lobschat et al. (2021) describe as the cultivation of a framework of norms and values that guide organizational decisions and actions and promote the development of innovative management approaches and organizational culture. Responsible digitalization thus leads to CDR, as digital technologies that are not aligned with CSR objectives cannot form the basis of the norms and values that define corporate digital responsibility. Corporate governance and stakeholder theories emphasize the importance of companies addressing the interests of their stakeholders and taking social responsibility for long-term success (Freeman, 1984). Through digital transformation, companies can improve their engagement and communication with stakeholders and gain a deeper insight into their expectations of CSR. This process facilitates a harmonious balance between economic and social objectives. By prioritizing both profit and societal wellbeing, companies can more effectively meet their social obligations, drive economic progress and generate societal benefits (Sun et al., 2024).

Figure 1

From digitization to corporate digital responsibility (Merbecks, 2023)



Information and communication technologies (ICTs) are increasingly recognized as key tools for fostering innovation and increasing revenues. In this way, they facilitate the introduction of new services and new ways of operating within value networks (Martínez-Caro et al., 2020). Merbecks (2023) introduces a life-cycle model to differentiate more clearly between the terms from a socio-technical point of view (Fig. 1). Initially, innovations in information and communication technologies (ICTs) were the main aspect signifying the shift towards a digital economy, allowing us to use the term 'digitization' (Fig. 1, left). Subsequently, in the second phase, "digitalization" is coined to encompass two additional socio-economic facets of the digital transformation. In the third phase, another new socio-economic dimension of the digital age is the responsible use of ICT and the responsible use of consumer data, as illustrated in Figure 1 on the right.

Corporate Social Responsibility (CSR)

CSR, in its contemporary interpretation, has been an important and evolving issue since the 1950s. Indeed, examples of companies seeking to improve the conditions of society, communities or specific stakeholder groups can be traced historically back several centuries (Carroll et al. 2012). Scholars such as Van Marrewijk (2003) have identified three main narratives that outline the entities to which organizations are responsible. Friedman's assertion that "the social responsibility of business is to increase its profits" (Friedman, 1962). Through this lens, digital technology is perceived as merely a means to increase efficiency or to discover new avenues of profit, with no specific obligations beyond these goals. Carroll (1979) identified a fundamental link between companies and their stakeholders, known as the stakeholder approach. This perspective sees stakeholder engagement as an essential antecedent to socially responsible action. Therefore, digital technology is also recognized as a means to engage with stakeholders, a concept that is increasingly supported by recent research in the field of CSR. The societal perspective argues that companies have a duty to society as a whole. From this perspective, digital technology is expected to improve working conditions, autonomy (such as freedom of expression) and access to information, services and wealth, as well as promoting the sustainability of business operations (Grigore et al., 2017).

Carroll's four-part definition of CSR was originally stated as follows: "Corporate social responsibility encompasses the economic, legal, ethical and discretionary (philanthropic) expectations that society has of organizations at a given point in time" (Carroll 1979, 1991). This set of four responsibilities provides a foundation or infrastructure that helps to describe in some detail and to frame or characterize the nature of the responsibilities of business to the society of which it is a part (Carroll, 2016).

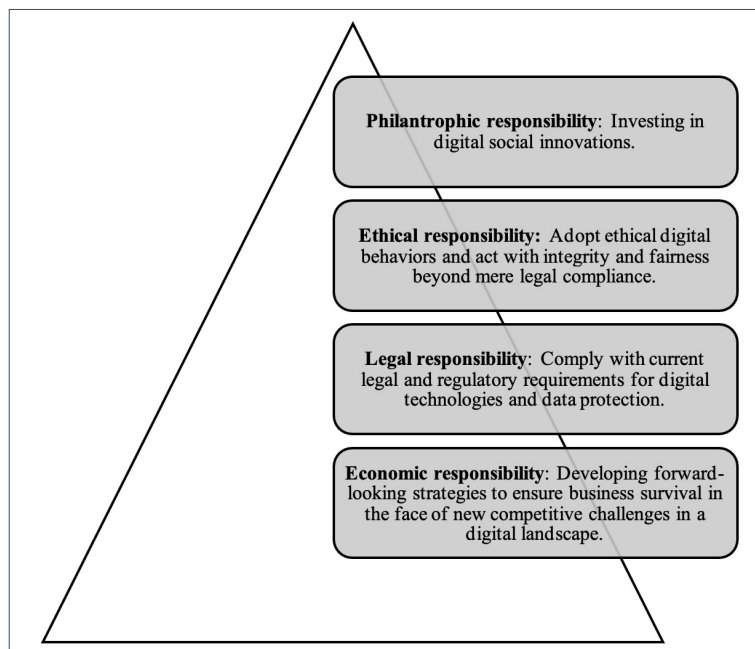
Corporate social responsibility is the voluntary use of company resources to enhance social welfare (Du et al., 2010). As a sustainable management strategy, CSR has garnered significant interest in society (Barrena-Martínez et al., 2015) and has become a crucial aspect of the agenda for global companies in today's socially conscious market. Evolving from a mere marketing tool aimed at improving public perception since its inception in the 1950s, CSR has transformed into a fundamental strategic element essential for the long-term sustainability of companies (Rodríguez-Gomez et al., 2020). Ultimately, CSR practices have emerged as a strategic tool for companies to gain a competitive advantage (Jakob et al., 2022) and are now considered a necessity as part of their overall strategy rather than merely an option (Yusliza et al., 2019).

The number of theories has been proposed to explain the concept of corporate social responsibility (CSR), it is difficult to arrive at a single definition. Nevertheless, there is a consensus among these definitions around five core dimensions: stakeholder, social, economic, voluntary and environmental aspects (Dahlsrud, 2008). In the corporate environment, the adoption of CSR primarily encompasses three of these five dimensions: economic, environmental, and social aspects. These facets form the basis of the Triple Bottom Line (TBL), a concept introduced by John Elkington in the early 1980s, which emphasizes a company's ability to excel in economic, environmental and social outcomes as a benchmark for CSR evaluation. Thus, TBL serves as an antecedent to CSR, which encompasses a broader scope that extends to legal, ethical, and philanthropic responsibilities (De Giovanni & Vinzi, 2014). Companies that adopt TBL principles demonstrate a strong, measurable and credible commitment to CSR (Cardinali & Giovanni, 2022).

Corporate Digital Responsibility

Several scholars have observed a clear link between CSR and CDR. Bonsón et al (2023) have articulated that CSR and CDR actually share several fundamental principles (Bednárová & Serpeninova, 2023). Figure 2 illustrates the traditional concept of corporate responsibility and shows new emerging issues in the digital age across the four levels outlined by Carroll (1991).

Figure 2
The CDR Pyramid (Herden et al., 2021)



Identifying what constitutes CDR is a difficult task, given its status as an emerging area of both practice and academic interest. Richard Mason's writings from the 1980s effectively captured the core principle of CDR, highlighting its founding ethos. Since the 1980s, discussions of computer ethics have developed significantly in both theoretical and practical terms. Numerous authors have contributed to this growth, introducing a wide range of ethical frameworks specifically designed for the digital and information age. Notable among these are the concepts of information ethics, ethics related to machines or robots, ethics of the Internet, and cyber-ethics. These frameworks present various moral guidelines for navigating the ethical dilemmas posed by the digital age, particularly from the perspective of applied ethics. In addition, recent scholarship has begun to promote a more integrated approach to the ethical use of digital technologies, encouraging a move away from a focus on individual technologies (Mueller, 2022).

Digital responsibility is a critical area that may signal a new phase in the digital transformation journey, one that is more thoughtful and aware of potential long-term impacts or the needs of indirect stakeholders. This distinguishes it from corporate social responsibility, which primarily aims to mitigate the negative social and environmental impacts of business activities (Trier et al., 2023). Herden et al. (2021) suggests that the environmental, social and governance (ESG) framework is an appropriate tool for organizing CDR issues. They believe that this framework allows for a comprehensive categorization of CDR issues, aligning them with broader corporate responsibility goals. By using the ESG framework, companies can systematically address the environmental, social and governance aspects of their digital activities, ensuring that their digital practices are sustainable, ethical and transparent. This approach helps to integrate digital responsibility into the overall corporate responsibility strategy, promoting a holistic view of a company's impact on society and the environment.

Role of CDR in Business Areas

When viewed from different business disciplines, there are various definitions of CDR. The importance of corporate digital responsibility in marketing is highlighted by research efforts aimed at finding a balance between an organization's data needs and consumer reactions (Lwin et al. 2007). This area of study also includes examining the risks to an organization's reputation from data breaches, including hacking, data leaks, and issues related to surveillance, profiling, and targeted targeting of individuals (Martin et al 2017). In addition, the area of service studies addresses the implications of service-oriented robotics and privacy concerns arising from facial recognition technology, continuous consumer surveillance, and AI-driven decision-making processes (Wirtz et al. 2018).

Research in consumer behavior and psychology has emphasized the concept of psychological privacy, which encompasses the concerns consumers have about their privacy and the factors that give rise to these concerns, such as personality traits, knowledge and past experiences, as identified by Malhotra et al. (2004). The decision-making process regarding privacy involves weighing the benefits of providing data against the risks to privacy, taking into account the convenience, speed, personalization and customization associated with data sharing (Wirtz & Lwin, 2009).

This body of literature emphasizes the ethical considerations in the development of technology and its application by organizations. The influence of computer ethics in the field of business-related information systems research, explores the impact of technology on the ethical behavior of organizations (Chatterjee et al. 2017). Digital ethics serves to navigate and delineate anticipated impacts on users, whether considered acceptable or not (Wright, 2011).

The literature highlights the significant impact of technology on user engagement through design innovations, such as the moral gamification design framework presented. This framework illustrates how technology can shape user experience and behavior in an ethically informed way. Sustainable interaction design, as conceptualized (Blevis, 2007), posits design as a critical decision-making process that selects or shapes future modes of existence, using interactive technologies to promote sustainable practices. This approach emphasizes the potential of design to influence environmental and social well-being through the conscious use of technology.

Digital Corporate Responsibility Culture and its Strategies and Practices

The essence of organizational culture lies in a combination of artifacts - observable, tangible aspects of an organization's identity that can be seen, felt and heard when entering a new culture - values or beliefs, norms, standards and moral principles that can be identified through interviews and questionnaires - and underlying assumptions, which are unconscious, assumed notions that can be inferred indirectly from behavior (Schein, 1992). Duerr et al. (2018) propose to adapt this approach to a digital context:

1. Artifacts are manifested in the evolving structures of digitizing companies due to new forms of internal collaboration (cross-functional teams, physical and virtual collaboration, and dual structures) and external collaboration (start-ups, platforms with competitors and partners, and customer integration).
2. Values are digital goals and norms that are crucial for a new organizational culture, revolving around attitudes and approaches to digitalization; for example, responsibilities are decentralized across business units to improve the alignment of digital innovation processes.
3. Underlying assumptions in companies operating in the digital age relate to the need to integrate IT into innovation or the fair distribution of power that empowers employees by incorporating their ideas into the digital strategy.

A CDR culture refers to how an organization implements CDR, leading to a better understanding within the organization of what CDR entails (Lobschat et al, 2021) (Figure 3).

Figure 3
Conceptual Framework of CDR (Lobschat, 2021)

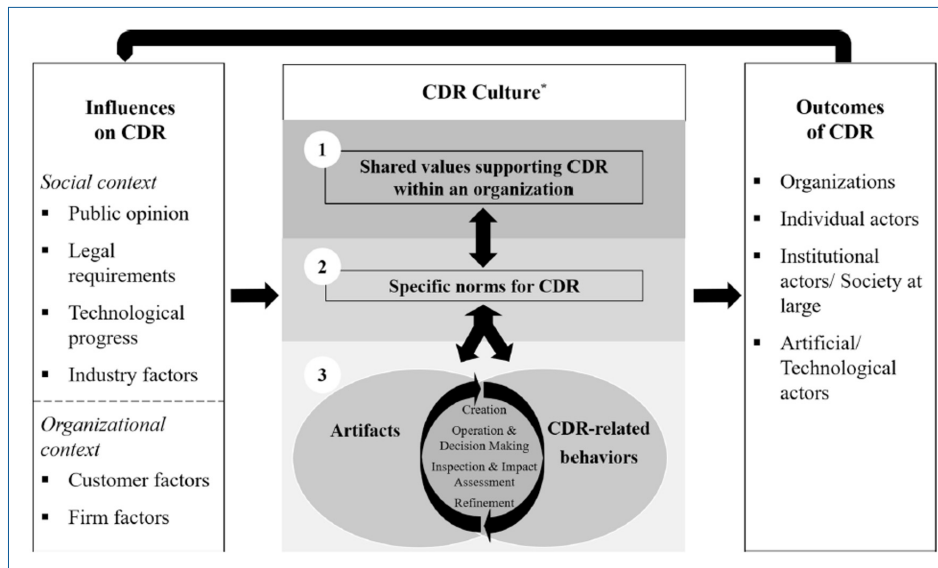


Figure 3 presents a comprehensive framework for developing a CDR culture within an organization. It outlines three main components: the drivers of CDR, the core of the CDR culture, and the outcomes of CDR practices. Influences on CDR are categorized into social and organizational contexts and include public opinion, regulatory requirements, technological advances, industry factors, customer expectations and company-specific factors. These influences shape the fundamental shared values and specific norms that make up the organization's CDR culture. Within this culture, artefacts such as policies and practices emerge through a cycle of creation, operation, decision making, review, impact assessment and refinement. This cycle ensures that CDR practices are continually improved and aligned with evolving ethical standards. The results of a well-established CDR culture are far-reaching, positively impacting the organization, stakeholders, wider society and the ethical use of technology. The framework emphasizes the importance of integrating CDR into organizational values and practices to raise ethical standards, protect digital rights and build trust with stakeholders.

Guideline for CDR Culture

In the context of the rapidly evolving digital landscape, it is imperative for organizations to develop a robust CDR culture. CDR strategies refer to the approaches adopted by organizations to manage and effectively implement their digital responsibilities. These strategies determine how organizations will act in areas such as digital ethics, data security, customer privacy and transparency. This section provides a practical guide to fostering such a culture, highlighting key principles and best practices. Establishing a CDR culture not only raises ethical standards within the organization, but also protects digital rights and builds trust with stakeholders.

Promote and implement collective CDR values, norms, artefacts and behaviors, making CDR a shared responsibility of all employees: Organizations need to address the daily ethical challenges faced by their managers and employees and equip them with the tools to make ethical decisions. This includes regularly reviewing and ensuring that codes of conduct are clearly communicated and followed (Bailey and Shantz 2018). Also, organizations provide evidence of senior management's commitment to CDR; senior management should lead by example, fostering a positive CDR culture within the organization and encouraging employees to adopt CDR principles.

- Integrate CDR practices into employee training, key performance indicators (KPIs), and incentives. Organizations should empower employees to address ethical failures and establish norms that encourage them to question decisions. They provide comprehensive digital literacy and CDR training to all employees at all levels and align rewards and recognition with CDR

behaviors and outcomes, and integrate CDR metrics (Dorr, 2021). This comprehensive strategy empowers employees at all levels to confidently handle ethical dilemmas and fosters a culture of continuous improvement in digital practices. Such a proactive mindset is essential not only for legal requirements, but also for building long-term trust with customers and stakeholders.

- Recognize the uncertainties associated with CDR and promote a culture of transparency to ensure employees understand the reasoning behind decisions. CDR artifacts, such as corporate policies, documentation, process models and standard operating procedures, should be used to clarify ambiguities and conflicts related to CDR. These artifacts specify good CDR practices and behaviors (Martin, 2020). A transparent and well-documented approach to CDR not only promotes a consistent internal culture, but also builds trust with external stakeholders by demonstrating a clear commitment to responsible digital behavior.
- Establish specialized technology and data positions responsible for CDR, such as ethics officers, committees, or panels, integrate digital positions into teams and units. Creating specific CDR roles and committees to oversee the management of technology and data in service processes. Integrate digital positions, such as data scientists and analysts, across teams and units, especially in service development and customer-facing teams (Wirtz et al., 2023). As technology continues to evolve rapidly, having dedicated CDR roles ensures that the organization can adapt to new challenges while maintaining a consistent commitment to ethical standards. Furthermore, this structural integration signals to stakeholders - both internal and external - that the organization is prioritizing ethical considerations in its digital transformation efforts, building a foundation of trust and accountability.
- Minimize consumer pressure by giving consumers choice and control over access to services, prioritizing consumer welfare. Ensure consumer privacy and the transparent and fair use of customer-generated digital assets (e.g. data) within digital supply chains. A consumer-first approach to digital technology, coupled with strong privacy protections, reflects a deep sense of respect for consumer autonomy and a proactive approach to ethical responsibility.
- Promote the collective importance of CDR within ecosystems and use CDR as a value statement for branding (Gawer, 2022). At a time when digital ethics are under increasing scrutiny, demonstrating a strong commitment to responsible digital behavior can enhance a brand's reputation and differentiate it in the marketplace. It signals to customers, partners and the wider community that the organization is not just compliant, but actively promotes ethical practices as a core part of its identity.

By following these guidelines, organizations can cultivate a comprehensive culture of CDR that goes beyond just complying with legal requirements. It positions them as leaders in ethical digital practices. This strategic emphasis on CDR not only fosters a heightened ethical awareness, but also establishes a solid framework of trust and accountability. Such a foundation is essential to achieving sustainable success and maintaining a competitive edge in the evolving digital landscape.

Discussion

CDR is gaining recognition as an emerging topic in academic research. Despite the growing appeal for organizations to improve their understanding and execution of digital responsibility, there remains a noticeable gap in the literature regarding the specific strategies that individual companies employ to address CDR challenges. This lack of comprehensive research highlights the critical need for in-depth studies that explore how companies are integrating digital responsibility into their operational and strategic frameworks. Such research would not only shed light on the different approaches to digital ethics and sustainability, but also serve as a guide for other companies seeking to navigate the complexities of digital responsibility. The call to action for organizations to adopt a more digitally responsible approach highlights the importance of aligning the use of technology with ethical standards and societal expectations, suggesting a key area for future academic research and practical application.

Theoretical frameworks and models contribute to a better understanding of how individuals, organizations and society can act with digital responsibility. The concept of CDR which incorporates ethical values, provides the indispensable foundation for the adoption and application of cutting-edge digital and artificial intelligence technologies, ensuring that their use is both responsible and in line with societal values.

This study proposes a comprehensive set of guidelines for organizations wishing to foster a corporate culture of digital responsibility. It is designed to provide a number of benefits to companies, including a structured roadmap for addressing unethical issues in the digital environment, building and strengthening trust with users and stakeholders, improving the company's long-term financial performance and competitive position, enhancing the overall customer experience, mitigating reputational risks, and providing employees with clear ethical key performance indicators (KPIs).

The proposed strategies and practices have several key components. First, it emphasizes the importance of senior management commitment to corporate digital responsibility practices. It also includes guidelines, process models and workflows that support corporate digital responsibility. It also emphasizes the need for ongoing training programs to improve employees' digital literacy and responsibility. Incentive mechanisms to encourage corporate digital responsibility behavior are also highlighted, as is the importance of clearly defined digital roles within teams and business units. The guide also suggests the appointment of auditors responsible for overseeing data security, algorithms, technology and ethics. In addition, the guideline emphasizes the importance of using new technology solutions that support accountability, ensuring transparency and clarity in customer privacy policies, and implementing limits on employee access to customer data. Finally, the guide suggests fostering collaboration with business partners to promote digital responsibility.

Overall, organizations are urged to consider ethical issues throughout the development and implementation of new technologies in order to effectively practice digital responsibility.

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