

AI declarations of DAX corporations: Do they mirror human-centered AI usage?

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Abstract: Discourses on the responsible use of artificial intelligence (AI) are not only driven by legal regulations such as the EU AI Act or academic initiatives. Companies are also beginning outlining guidelines and declarations for its usage. Based on a systematic analysis, we review the extent to which human-centered AI criteria are reflected in corporate declarations and how they are addressed. Through a content analysis of the publicly available declarations of 21 DAX corporations in the period from October to November 2023, the study indicates that companies have so far mainly considered technological and organizational aspects. Criteria of employee development have received less consideration. The findings of the study indicate that companies so far address AI from a rather general perspective and have not yet fully translated it into operational processes.

Keywords: responsible AI, EU AI Act, corporate declarations

1. Introduction

With the increasing use of artificial intelligence (AI) in work contexts, questions about the responsible use of this technology are becoming ever more pressing. Discourses dealing with guidelines for the use of AI are emerging in various contexts. Legal regulations such as the EU AI Act (European Parliament 2023) aim to ensure the ethical use of AI. Also, academic discourses are emerging on responsible and human-centered AI (e.g., Shneiderman 2022) as well as on human-centered AI in work settings (e.g., Berretta et al. 2023). At the same time, companies start to critically examine a responsible usage of AI and develop own critical guidelines and declarations. However, as the EU AI Act is still in the development phase and the scientific discourse focuses on a broad range of aspects, there is still no legally binding regulation or uniform understanding of guidelines in Germany and internationally. This creates a lack of clarity for the responsible use of AI.

With the work of Wilkens et al. (2023), a criteria-based approach was derived to structure the use of AI in a human-centered way. At the moment, however, it still remains unclear to what extent companies reflect a responsible and human-centered use of AI in these declarations and how they complement the academic discourse. Against this background, this study aims to investigate the extent to which the criteria for human-centered work with AI are included in corporate declarations and how they are addressed. By reviewing 21 declarations of DAX corporations, this approach provides an initial insight into how companies position themselves before the introduction of official regulations on reporting obligations for the use of AI.

2. Conceptual background: Criteria of responsible and human-centered AI

Academic discourse on the use of AI often takes place under the concepts of human-centeredness and responsibility. Some studies address this topic from a more technology-driven perspective (e.g., Zhu et al. 2018), while others have a stronger work context-related focus (e.g., Jarrahi 2018), or refer to job characteristics of human-AI interaction (e.g., Romero 2016). The different approaches to the investigation of responsible AI in the work context prompted Wilkens and colleagues (2023) to create an overview of the relevant criteria for the use of AI in a cross-disciplinary literature review. From a total of 101 scientific articles, they derived eight criteria for human-centric AI, which can be assigned to the three development levels: technology development, organizational development, and employee development (see Table 1). In combination, these criteria provide a comprehensive approach to human-centered AI development and use.

Table 1: Criteria for human-centered AI according to Wilkens et al. (2023)

| | |
|-----------------------------------|--|
| <i>Technology development</i> | <p><i>Explainability:</i> Transparent data usage and interpretation to improve technology adoption and to provide helpful information to users (e.g., remaining error probabilities)</p> <p><i>Trustworthiness, privacy & ethics:</i> Unbiased data structure and ethical concerns in data collection and usage, with the aim of operating AI reliably and ethically without discrimination.</p> |
| <i>Organizational development</i> | <p><i>Accountability & safety culture:</i> Establishment of systems and organizational routines (e.g., process descriptions or checklists) to ensure reliability and to promote responsibility at system level</p> <p><i>Compensation of weaknesses in the system:</i> Deficit-oriented view to compensate for human fatigue, unstable concentration or cognitive limitations in sensory discrimination</p> <p><i>Knowledge utilization from the user domain:</i> Close integration of the user domain in software development</p> |
| <i>Employee development</i> | <p><i>Augmentation & human agency:</i> Technology design for an enhanced use by employees who experience empowerment and professionalization through the human-AI interaction.</p> <p><i>Physical & mental health:</i> Protecting employees from negative influences such as heavy loads, chemical substances, or stressful interactions</p> <p><i>Job loss prevention:</i> Prevention from negative consequences of new technologies on employment</p> |

Although the criteria are based on the analysis of academic articles, they could be useful in other contexts. Since the responsible use of AI is not yet regulated by national or international laws and there is no common understanding, they may provide a valuable analysis grid to systematize the heterogeneous AI declarations of companies. In doing so, we not only use them as a means of creating a uniform understanding of human-centered AI, but also contribute to linking the academic discourse with the practical implementation in companies.

3. Methodology

To explore how companies address human-centered work with AI in their declarations, we conducted a systematic review. Thereby, we focused on DAX40 corporations and reviewed their websites, public archives, PDFs, external reports, and articles, as well as annual reports. Using Boolean operators, we combined keywords like artificial intelligence, AI, machine learning, ML, and intelligent technology with terms such as declaration, guideline, standards, digital strategy, framework, whitepaper, or regulation. The review occurred from October to November 2023, resulting in 21 DAX companies with publicly available declarations. The term *declaration* refers to various forms of statements, codes of conduct or similar that describe how AI is used in the company. Internal company documents were not considered at this stage. To capture the underlying understanding of the addressed human-centered AI criteria in the corporate declarations, we conducted a structuring content analysis (Mayring, 2019; Mayring & Fenzl, 2014), using the criteria of Wilkens et al. (2023) as a deductive coding scheme.

4. Findings

While certain organizations formulate clear declarations and guidelines (e.g., Allianz SE), others more implicitly provide insights through website posts or brief reports without formulating specific guidelines (e.g., MTU Aero Engines) or integrated them into existing codes of conduct or ethics guidelines (e.g., Merck). Overall, they refer to all human-centered AI criteria of Wilkens et al. (2023), albeit with different emphasis (see Table 2).

Explainability as a central criterion in all declarations, is emphasized by organizations through providing the best possible guarantee of transparency, comprehensibility, and interpretability of AI results (e.g., BMW). However, the criterion is also classified as a guideline for external communication and aims to provide external stakeholders, such as customers, with a transparent presentation of the exact purpose of the AI (e.g., Commerzbank). Closely related is the criterion of *trustworthiness, privacy & ethics*. On the one hand, discrimination- and bias-free data sets (e.g., Allianz) and inclusion-related aspects (e.g., Infineon) are addressed to ensure the responsible use of AI. On the other hand, the guidelines seem to go beyond the dataset-related issues and put general social-related aspects such as fair working conditions or ethical justice in focus. With regard to privacy, almost all companies refer to existing legal regulations like the GDPR.

Accountability & Safety Culture is discussed diversely as a further central criterion in almost all declarations. It includes aspects of general safety and accountability as well as social responsibility challenges. In essence, however, the declarations primarily focus on a robust use of AI in order to ensure safety and reliability during use and to avoid unintended consequences and risks. In order to tailor the use of AI to the specific application context, the criterion of *knowledge utilization from the user domain* is also expressed. Siemens, for example, emphasizes that domain knowledge must be considered from different perspectives. Thereby, some companies focus not only on

Table 2: Assignment of the AI declarations to human-centered AI criteria of Wilkens et al. (2023)

| | Technology development | | Organizational development | | | Employee development | | |
|-------------------------|------------------------|--|--|---|---|--|---|--------------------------------|
| DAX Corporations | Explain-ability | Trustworthiness, Privacy & Ethics | Accounta- bility & Safety Culture | Compen- sation of weaknesses in the system | Knowledge utilization from the user domain | Augmen- tation & human agency | Physical & Mental Health | Job loss prevention |
| Deutsche Telekom | x | x | x | x | x | x | x | x |
| Heidelberg Materials | x | x | x | x | | x | x | x |
| Siemens | x | x | x | x | x | x | | |
| Siemens Energy | x | x | x | x | x | x | | |
| Siemens Healthineers | x | x | x | x | x | x | | |
| BMW | x | x | x | | | x | x | |
| Continental | x | x | x | | x | | x | |
| SAP | x | x | x | | x | x | | |
| Hannover Rück | x | x | x | x | | x | | |
| Infineon | x | x | x | | | x | x | |
| Allianz | x | x | | | x | x | | |
| Daimler Truck | x | x | x | x | | | | |
| Henkel vz. | x | x | x | x | | | | |
| Merck | x | x | | | x | | x | |
| Mercedes-Benz Group | x | x | x | x | | | | |
| Deutsche Börse | x | x | | x | | | | |
| Münchener Rückvers. | x | x | | | x | | | |
| Commerzbank | x | x | | | | | | |
| E.ON | x | x | | | | | | |
| Porsche AG | x | | | x | | | | |
| Porsche Automobil vz. | x | | | x | | | | |

employees as internal users, but also on customers (e.g., Deutsche Telekom) and stipulate that AI applications should be tested in suitable contexts. In a way, they also address the criterion of *compensation for weaknesses in the system*. While this sometimes remains rather indirect for individual companies, it is often linked to an economic added value (e.g., Mercedes-Benz Group).

Organizations emphasize the responsibility of humans for monitoring and reviewing AI decisions (e.g., BMW) and that AI serves to maximize human capabilities (SAP). Thereby, addressing the criterion of *augmentation & human agency*. Regarding *physical and mental health*, DAX companies not only refer to the fulfillment of legal safety requirements, but also emphasize the additional provision of organizational mechanisms that act as safeguards against uncontrolled behavior, for example (Continental). Even though *job loss prevention* is sometimes implicitly included in references to the *augmentation & human agency* criterion, the criterion is hardly represented in the company declarations. Only Heidelberg Materials publishes explicit guidelines to ensure the criterion by requiring all AI deployments within the organizations to be approved by the works council in order to avoid job losses.

5 Discussion and outlook

Comparing the declarations of the 21 DAX companies identified with the criteria of Wilkens et al. (2023) from the academic context, it becomes apparent that the former primarily address criteria relating to human-centered technology and organization development. The technology development criteria are included in almost all declarations, suggesting that there is a kind of common denominator in all declarations. Further consideration of the criteria for organizational and employee development allows declarations to be divided into (1) declarations that take into account the criteria of technology development and organizational development (Allianz, Daimler Truck, Henkel vz., Merck, Mercedes-Benz Group, Deutsche Börse, Münchener Rückversicherung, Commerzbank, E.ON, Porsche AG, Porsche Automobil vz.) and (2) declarations that consider the criteria of technology, organizational, and employee development (Deutsche Telekom, Heidelberg Materials, Siemens, Siemens Energy, Siemens Healthineers, BMW, Continental, SAP, Hannover Rück, Infineon). It should be noted that even declarations that allow references to the criteria of employee development lack a translation into operational processes in terms of content.

From the perspective of human-centricity, it is important that aspects from all three development perspectives are taken into account when using AI (Wilkens et al., 2023). It can therefore be argued that it is desirable to develop declarations in this direction. Based on this consideration, the declarations from (1) can be assigned to a lower development level than the declarations from (2), which already take into account aspects of employee development. However, there is still potential for further development, because in order to ensure human-centricity in the development and use of AI, the declarations still need to be translated into operational processes.

Furthermore, the analysis shows that companies reference in their declarations to additional aspects like general social and responsibility challenges, such as ethics,

sustainability, or inclusiveness. In some cases, references are also made to corporate values or codes of conduct. This underscores the fact that these corporate declarations are tailored to diverse audiences: First, employees and users of the AI-based application and second, external stakeholders to whom they demonstrate a responsible approach to intelligent technology. This further underscores that a significant portion of these declarations is lacking a clear connection to specific operational areas and workplaces within the organization. The formulation of these declarations is, therefore, predominantly rooted in an accountability perspective, characterized by C-level responsibility and an integration into the overall firm strategy.

The present study is not without limitations. During the data collection of publicly accessible documents and information there is always the possibility that the search strategy used has excluded certain documents and information. Furthermore, it must be taken into account that publicly accessible documents do not necessarily reflect the truth of internal company processes.

Ultimately, this study is a first attempt to give an insight into the efforts of companies to shape the use of AI responsibly. Due to the yet unclear legal framework, the human-centered criteria may provide a good starting point for the further development of companies' declarations.

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06. – 08. März 2024

GfA-Press

Bericht zum 70. Arbeitswissenschaftlichen Kongress vom 06. – 08. März 2024

Institut für Arbeitswissenschaft und Technologiemanagement (IAT), Universität Stuttgart

In Zusammenarbeit mit: Fraunhofer-Institut für Arbeitswirtschaft und Organisation (IAO), Stuttgart

Herausgegeben von der Gesellschaft für Arbeitswissenschaft e.V.

Sankt Augustin: GfA-Press, 2024

ISBN 978-3-936804-34-8

NE: Gesellschaft für Arbeitswissenschaft: Jahresdokumentation

Als Manuskript zusammengestellt. Diese Jahresdokumentation ist nur in der Geschäftsstelle (s. u.) erhältlich.

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Screen design und Umsetzung

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