

With AI to more participation in the world of work

White Paper

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Executive Summary



Artificial intelligence (AI) can facilitate many work processes and support employees at work. AI technologies can enable people with disabilities to perform new activities and to participate in working life in a more self-determined and equal way. That means, that in order to realise participation in the world of work, a rethink in companies and structural changes are necessary in addition to technical support. Taking account of their different characteristics, learning styles and abilities the active involvement of those affected is crucial. In addition, the recognition and appreciation of individual needs must be anchored in an inclusive corporate culture and barrier-free work organisation. In short, in order to be able to use the opportunities of AI for participation in the world of work, suitable framework conditions must be in place: This includes (digitally) accessible workplaces, a corporate culture that promotes diversity and consideration of people with impairments as early as the research and development stage. The potential of AI technology for self-determined participation in an inclusive world of work can be sustainably used and promoted for people with impairments only with such conditions.

Participation in the world of work

Traditionally, work environments place standardised requirements on employees. These range from physical requirements to the size and operating height of machines, desks or shelves to certified (vocational) qualifications. However, such standards can pose enormous challenges for people with physical, mental or psychological impairments, whether due to illness, accident, age or birth. An inclusive world of work, in contrast, must focus on individual abilities. Modern technologies such as AI can contribute to enabling individuals to perform new work activities while taking individual needs into account, and thus facilitate participation in the sense of a self-determined life and work. Often today, AI systems are still developed with broad target groups and large-scale marketing in mind. The central challenge is therefore that the technology used consider the precise needs and specific requirements of people with impairments.

Contributions of AI technologies to an inclusive world of work

The use of AI leads to new forms of collaboration between humans and technology, ideally based on the respective strengths of both. Humans will increasingly focus on building tacit knowledge, creativity, empathy and communication. AI initially used in highly automatable fields of activity – also due to the development of large language models such as ChatGPT – is increasingly opening up completely new areas. This development enables the adaptation of work, tasks and roles based on the individual skills and competences of the employees. AI systems can not only perform tasks (partially) autonomously or assistively and improve processes to support people with impairments – for example through exoskeletons, orthoses or prostheses – but also assist with or partially take over cognitive tasks: These range from assistance systems that help with structured tasks to learning support and social coaching. Thus, AI systems can compensate for impairments, be it AI solutions that translate communication into sign language or virtual training environments with AI-controlled avatars for training social interaction.

Furthermore, the use of many systems can go beyond the actual target group and empower all workers in their individual abilities. For example, older workers can benefit from motor support to lift heavy objects. Ultimately, a more diverse workforce can also open up the possibility for companies to tap into new labour market potential and integrate competent employees into the workforce as a win-win situation. Last but not least, the increasing shortage of skilled workers makes it also necessary to better integrate people with impairments into working life.



In the analogue and digital barrier-free workplace, employees with impairments work together inclusively with their colleagues with the help of AI-based support.

Challenges

Apart from the opportunities, the limits and risks of AI-based participation must also be considered. AI systems can counteract the goal of participation in various ways, for example by taking over automatable and simple activities or, in the case of unsuitable training data, tend to reinforce exclusions, for example in the selection of applicants. Representative training data is therefore an important prerequisite for greater participation and should be based on the usage data of those affected. AI systems can reinforce disadvantages if they have been trained with data in which people with impairments do not appear. Conversely, this means that a well-designed and implemented AI application requires diverse development teams that involve employees with disabilities in the development and implementation of AI systems in the company at an early stage. In this way, AI systems can be adapted to individual needs and requirements in the best possible way and make a meaningful contribution to more actual participation: They can relieve the burden of everyday work and enable more autonomy, flexibility and creativity. For the future, it is therefore crucial that AI technology does not become a burden for those affected.

Outlook

AI systems can support the equal participation in the world of work of people with different impairments. This requires appropriate technologies in development and production as well as favourable framework conditions, including a diverse inclusive corporate culture, promotion through disability mainstreaming, technology regulation for inclusive developments and barrier-free education. Research projects and cooperation with companies are also needed. Above all, the debate on AI in the world of work needs to be more inclusive to promote participation. The same applies to all relevant stakeholders from politics, companies, society and also interest groups as well as developers. AI-enabled participation requires AI understanding and sensitivity from all stakeholders. Inclusive thinking must therefore already be incorporated into development processes in order to design products that take impairments into account by involving user groups at an early stage and thus creating personalised, diverse technologies. A holistic approach is needed to enable people with disabilities to participate in working life on an equal footing and in a self-determined manner. For this, technology, education, regulation and societal cooperation must intertwine in order to successfully implement AI-supported participation in the world of work.

Affected persons and representatives of associations for people with impairments were involved in the development of the white paper in the context of a workshop (March 2022).

Imprint

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This executive summary is based on the white paper *With AI to more participation in the world of work. Possible applications and challenges*, Munich, 2023. The authors are members of the working group Future of Work and Human-Machine Interaction of Plattform Lernende Systeme. The original version of this publication is available at: https://doi.org/10.48669/pls_2023-4

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