Democratic Artificial Intelligence and the Fourth Industrial Revolution

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The emergence of modern industrial society in Europe was shouldered by industrial dynamism and marked by serious crises and economic booms. Family businesses became joint-stock companies, often run by managers instead of patriarchs or matriarchs; syndicates, cartels and monopoly-like positions developed, accompanied by the emergence of the first trade unions and state intervention policies. But it was not only the economy that changed; socially, too, the sharp divide between the wage-dependent working class and the owning bourgeoisie became increasingly clear, supplemented in the course of industrialisation by a third class, the white-collar workers.

Two wars and some decades later, this sharp cut and the concept of the "born proletariat" is more blurred, and political courses are being set in the leading industrial nations not only to secure but also to increase the prosperity of the population. Equal opportunities for all is the credo of the digital age, the internet of things, networks and artificial intelligence (AI) the weapons of the modern fourth industrial revolution.

However, these are the very weapons that threaten equal opportunities, as they go hand in hand with great complexity and disturb a wide range of industries through their disruptive nature. Intelligent algorithms are not only recommending videos, songs or clothes on various platforms, but are increasingly replacing employees; a trend that is growing stronger (World Economic Forum, 2017), and dividing the participants in a society not into the middle class and working class, but AI illiterates and AI literates.

This development becomes serious with regard to low- and middle-income countries, which often have the basic resource and data scattered across homogeneous groups but lack

infrastructure and also face a brain drain due to the ongoing war of talents. A study by Accenture (Purdy & Daugherty, 2016) implies that AI may potentially double the economic growth of 12 high-income countries through intelligent operation, labour and capital augmentation and innovation. This economic potential highlights the necessity of making AI more accessible and engaging in a way that empowers individuals and institutions, especially in lower-income countries to facilitate and promote their competitiveness in the global AI development race.

In addition, society has to deal with the political problem of the AI industry: AI is designed to be as intelligent and monetarily efficient as possible, rather than the most sustainable and socially beneficial. A current example of this is Facebook, a company that represents a market power par excellence with almost 2.9 billion monthly active users (Statista, n.d.). Recently, Facebook has been criticised because the algorithm used to recommend posts to users is said to favour extreme opinions to increase interaction on the website. According to a whistle-blower's hearing in front of the US Congress, profit has repeatedly been put before the good of society.

The arms race of various nations regarding AI is also already in full swing. The American National Security Commission on Artificial Intelligence, for example, expresses in its Final Report a "new warfighting paradigm", and "algorithm against algorithm" (National Security Commission on Artificial Intelligence, 2021, p. 22), which can undoubtedly also be said for an AI-supported economic system, but hardly any measures are being discussed and implemented in politics to channel the disruptive structural change on social sustainability.

However, a rethink must take place - instead of dividing the population into AI illiterates and AI literates, democratic states must educate the citizens in a mature, diverse and ethical manner through appropriate retraining programmes. Students must be adequately prepared for the work and use of AI, and ethical design and use must play a pivotal role in their education. Furthermore, the social system, which originated in early industrialisation, must be rethought - possibilities are the taxation of the results of algorithms and a basic digital tax. AI development, specifically elementary research, data and process innovations must become more accessible to open the competition to more potential users from all around the globe. Furthermore, solutions that lower the entry hurdle for people who have not yet come into

contact with AI such as no-code or low-code AI must be brought more into focus and receive promotion.

At the same time, risks such changes bring along cannot be neglected. The openness of AI poses uncertainty concerning strategic implications in the medium-to-long-term and no-code and low-code solutions do not necessarily promote transparency due to their frequent black-box architectures. Therefore, a consistent ethical assessment and good governance are essential. Far-reaching educational integration and fair access as well as the protection of privacy and personal agency while developing measures that promote socially sustainable AI can ensure that the structural change is democratic - and that we may one day be able to speak of democratic AI.

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