

AI in the Boardroom – Revolutionizing Decision- Making Processes



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The Future is Now. Algorithms – sometimes even referred to as virtual board members – are increasingly considered as an indispensable voice in the decision-making processes of boards.

A venture capital firm in Hong Kong already made it happen in 2017. Deep Knowledge Ventures (DKV) appointed the first artificial intelligent (AI) robot to its board of directors. Dmitry Kaminskiy, managing partner at DKV, is convinced that it was thanks to the algorithm Vital that the company successfully mastered a serious crisis: DKV started as a traditional biotechnology fund with a team of advisors and analysts using traditional methods like trend analysis and due diligence.¹ However, the failure rate in the biotech sector is extremely high with approximately 96% of the drugs not completing clinical trials, and the traditional methods were not sufficient to identify and assess all risk factors. Only by starting to analyze large data sets could patterns be revealed and more than 50 parameters identified to critically assess and thus better predict the risk of failures and the chances of success, respectively. Today, Vital 2.0 integrates data from scientific literature, grants, patent applications, clinical trials, and even individual team members' biographies of companies DKV is interested in.

Since cognitive diversity is a key element of successful board work, the question is why boards should not include AI in their decision-making process? Of course, Vital's role is a little different to the one of an «ordinary human director». DKV treats the algorithm like a board member with observer status, but the full board agreed not to make any positive investment decisions without consulting its virtual board member Vital.

¹ Vital stands for Validating Investment Tool for Advancing Life Sciences. Thanks go, amongst others, to Dr. Viktoria Kickingger from the Directors Academy for her inspiring talk and media retrospect at the 10. Frankfurter Aufsichtsratsagung on September 22, 2021.

Nevertheless, on companies' technology roadmaps the level of AI maturity is still considered rather low compared to other digital technologies. And although plenty of AI pilot projects with fascinating results were conducted, the resulting AI initiatives have not yet led to large jumps in speed, scale, quality, or cost efficiency combined with a pipeline of profitable new offerings.² Instead, many AI initiatives are still suffering from the ailment of misunderstanding and multiple alternative definitions, descriptions, and use cases which muddle reality.³

The Gartner roadmap for emerging technologies 2020 – 2022 identifies Machine Learning, Deep Learning, Natural Language Processing, Neural Networks, and AI Systems, alongside Edge Computing, Biometric Authentication Methods, and Social Distancing Technologies, as emerging must-watch technologies.⁴ Furthermore, ready-made AI-powered data platforms have brought big data analytics, IoT, edge computing, and other advanced technologies to the business world's doorstep.⁵ While AI-as-a-Service (AlaaS) supports AI from customer service to robotic process automation, marketing, analytics, and predictive maintenance, AI-Platform-as-a-Service (AIPaaS) additionally offers an end-to-end solution providing a complete, intelligent data management platform that requires little human intervention (e.g., data scientists).⁶

Moreover, and in order to fully uncover future AI opportunities, the board of directors needs to ensure that an ethical foundation for its digital world is established throughout the company.⁷ This includes a new model for Data Ethics – one that guarantees the ethical quality of the AI's digital DNA – as well as a fully mature risk framework acknowledging priorities of data privacy management.

Since data are the lifeline of AI, data strategy is key and should be on a board of directors' constant 'rethinking list' (as with the 5 Vs; i.e., volume, variety, velocity, validity, and value). In addition, boards should be aware of the fact that anything could be a pattern. Thus, it is in the nature of inductive learning that there cannot be a universal 'best' algorithm. Therefore, a wide variety of algorithms exists in diverse business applications. In this context, scaling and maintaining AI in the decision-making processes is challenging. Boards must keep track of the 'data versions' the algorithms were trained on and continuously monitor the Machine Learning Pipeline as a developer-to-user workflow.⁸

Summing up, curiosity and endurance will enable interactions between humans and machines and provide a successful future. It was only very recently that the combination of human and machine creativity was brilliantly exemplified by the «Beethoven X – the AI project»: In 2021, 199 years after Ludwig van Beethoven's first sketches that he never finished, the 10th Symphony was completed with the aid of AI and a team of international experts.⁹ On October 9, the world premiere took place in the Telekom Forum in Bonn and was streamed live around the world.

Let AI music join the board room. The future is NOW.

2 Artificial Intelligence for Boards – Gearing up for the Future of Business, UnternehmerTUM, Whitepaper Initiative for Applied Artificial Intelligence, October 2020.

3 Inventing World 3.0. Evolutionary Ethics for Artificial Intelligence, Matthew James Bailey, 2020.

4 2020 – 2022 Emerging Technology Roadmap for Large Enterprises, Gartner, 2020.

5 Streaming devices and technologies became the new normal in global businesses.

6 Like a cloud platform where business users can avail required services on a pay-per-use or pay-per-service basis; thus, in AIPaaS, business customers can access a host of data services without investing a penny on costly in-house infrastructure or full-time technical manpower.

7 Amongst many others; Inventing World 3.0. Evolutionary Ethics for Artificial Intelligence, Matthew James Bailey, 2020.

8 Artificial Intelligence for Boards – Gearing up for the Future of Business, UnternehmerTUM, Whitepaper Initiative for Applied Artificial Intelligence, October 2020, p. 6.

9 <https://www.magenta-musik-360.de/beethoven-10-sinfonie>.