Lernende Systeme

GERMANY'S PLATFORM FOR ARTIFICIAL INTELLIGENCE

New Business Models using Artificial Intelligence

Report by the Working Group
Business Model Innovations

Executive Summary

Artificial Intelligence (AI) has recently made breakthroughs in very different areas of application. This progress has been made possible by advances in algorithms, particularly in the case of Machine Learning (ML) and Deep Learning (DL), coupled with the availability of very large volumes of data (Big Data) and advances in fast, parallel computing (Kersting, Tresp 2019). Applications that just a few years ago seemed to be far out of reach are now already – or are soon to become – part of our daily lives.

These rapid technological developments pose fundamental questions for the economy and wider society. Will Artificial Intelligence significantly alter our economy and business models, just as the internet is doing? Will the technology lead to cost savings? Will it enable companies to offer better products and services – and therefore introduce new sources of revenue, too? How are we utilising advances delivered by Artificial Intelligence for areas such as automation and individualisation? And how are we facing up to potential risks at the same time? As a society, we need to find ways to harness the benefits of Artificial Intelligence without causing conflict on the labour market or compromising our privacy.

Citizens must have the opportunity to help shape the rules for using AI, but that means they need (access to) information and a basic understanding of the benefits and role of AI for the economy – both in the present day and in the future.

The working group Business Model Innovations of Plattform Lernende Systeme engages with the digital and AI-driven economy. Its experts represent different stakeholder groups from the world of business, the scientific community and wider society. These experts maintain a wide-ranging dialogue about how

AI-based business models can be developed successfully and for the benefit of all parties. Consequently, the working group aims to support businesspeople and entrepreneurs by offering case studies and guidelines. However, it is also formulating a vision for the future and development options for decision-makers in politics, business and wider society. After all, the right framework provides the ideal basis for building sound and successful AI business models.

The working group views its report as a contribution to the ongoing dialogue – one that is intended to stimulate debate both within Plattform Lernende Systeme and amongst the general public. The Business Model Innovations working group proposes the following recommendations for action, which it has formulated as stimuli and now aims to discuss both within Plattform Lernende Systeme and in a broader dialogue with citizens.

Cutting-edge technology is essential

- Develop corporate strategies for technical infrastructure and strategies for securing speed, reliability, scalability, interfaces and data security
- Establish new types of collaboration for creating distributed European hyperscalers
- Expand large-area and needs-based gigabit infrastructures
- Extend support programmes for cutting-edge research and, in particular, reinforce the transfer of research into the economy

Financing

- Use a regulatory framework to incentivise additional growth financing in Germany and Europe
- Invest capital resources in growth companies on a more long-term basis so that both established and technologically innovative AI business models benefit from long-term development
- Expand cooperation between growth companies, established businesses, universities and non-university-based research institutions

Handle data responsibly

- View high-level data protection as a key competitive advantage for German and European companies in the global competition surrounding AI
- Interpret the General Data Protection Regulation (GDPR) wisely, so as not to endanger innovation in AI and the related business model
- Incorporate the European perspective into the development of standards for responsibly handling AI and data
- Promote processes for anonymising, pseudonymising and simulating data and advocate social dialogue about data protection, particularly based on labelling and declaration obligations in specific circumstances

Corporate responsibility and legal frameworks

- Take on responsibility for staff, customers and society as a whole – by formulating and putting into place clear and binding AI codices in companies
- Develop regulations to establish obligations for transparency, liability and accountability:
  - Differentiate between B2B and B2C applications
  - Enhance and refine existing regulations instead of creating new ones

- Further develop competition law for the requirements of AI-based business models
- Reduce bureaucracy and tax burdens for start-ups
- Set up a system that will continuously assess the technological consequences of AI, analysing the impact of AI on society
- Adapt systems of codetermination in businesses and in the administrative system to take into account new requirements emerging due to AI

Value creation networks

- Make thorough preparations for inter-company activities as part of global, digitalised value creation networks
- Initiate or participate in platforms – also accepting, under certain circumstances, that there will be "coopetition" with rivals – in order to establish a critical mass of data through collaboration
- Form alliances consisting of established companies or organisations and AI start-ups in order to develop new technologies and disruptive business models
- Reinforce and expand knowledge-sharing between universities, research institutions and companies
- Individual entrepreneurs and small or medium-sized enterprises to find a role in a platform ecosystem, without making themselves replaceable

Build up core skills, ensure acceptance and participation

- Develop and prepare usefulness scenarios for effective applications of AI
- Establish and expand operational qualifications and additional training programmes for AI
- Expand "communities of expertise" between businesses and scientific partners such as the German Research Center for Artificial Intelligence (DFKI), Fraunhofer, universities, etc.
- Establish and expand AI skills in the workforce
- Enable a systematic approach to additional training by carrying out scientific investigations and studies on employment and training requirements
- Conduct research and transfer projects to test out new work models that address primarily non-technical personnel

Imprint
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This executive summary is based on: Plattform Lernende Systeme (Ed.): *Innovation nutzen, Werte schaffen – Neue Geschäftsmodelle mit Künstlicher Intelligenz – Zielbilder, Fallbeispiele und Gestaltungsoptionen* (Bericht der AG Geschäftsmodellinnovationen), Munich 2019. The original version of this publication is available at: https://www.plattform-lernende-systeme.de/publikationen.html

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