Guidelines for the Handling of Artificial Intelligence

Berlin, 17 September 2018

The area of Artificial Intelligence has in recent years undergone strong transformation and rapid development. In particular, its dynamic learning systems are currently being used more and more frequently and are opening up hitherto undreamt of areas of application.

Artificial Intelligence systems and digital assistants have already become everyday experiences for many people and have now also become part of the private sphere. These systems are being used in homes and offices, but also in the automotive industry, with the objective of realizing smart homes, smart buildings, and autonomous driving. The prospect of the increased use of such systems and technologies has fueled the debate about the handling of Artificial Intelligence and its reciprocal effects on the state, society, and the economy. The question of which political, legal, and societal regulatory frameworks are appropriate for Artificial Intelligence is becoming a central question of our time.

Internationally, politics is acknowledging the trailblazing importance of Artificial Intelligence for positive social and economic development. At the European level, the cornerstones of an AI strategy are being developed. What is desirable is a unified Europe-wide framework with common rules for the use of Artificial Intelligence. And German politics have also taken the initiative. An important anchor point for this is the coalition agreement between the CDU, CSU, and SPD. This specified the development of an AI master plan, with the aim of setting forth the national handling of Artificial Intelligence. From this, the "National Strategy AI" was derived, the key pacts of which were published in the summer of this year. Alongside this, research for this area is to be driven forward through a purpose-built German-French center. A German federal government data ethics commission is also to be tasked with the question of the use of data, and is to put forward corresponding recommendations. In the German Bundestag, a separate commission of inquiry will also look at the topic Artificial Intelligence.

The handling of data, the relationship between humans and technology, the societal responsibility of developers and operators of Artificial Intelligence, and the development of a strategy for the judicious support of Artificial Intelligence are core issues of the overall debate. To accompany the various discussions and to place the current technological developments in context, eco – Association of the Internet Industry has formulated the following guidelines.

- **The acceptance of Artificial Intelligence must be transparently fostered**

In the case of Artificial Intelligence systems, the question inevitably arises as to the transparency and traceability of the technologies and algorithms used, as well as their decisions. Transparent handling of Artificial Intelligence can strengthen people's trust in a system that works and makes decisions autonomously; the provision of basic knowledge on the systems and methods of Artificial Intelligence must become a part of general public education. Politics and society still view Artificial Intelligence at least partly with skepticism. Fears are pronounced regarding the handling and

generation of data, but also the way Artificial Intelligence works, its purpose, and its multifaceted impact on our everyday life.

There is therefore an onus on providers and operators of Artificial Intelligence systems to communicate the working processes of their service and products in a transparent manner. For users and data subjects, the following must be made comprehensible: how an Artificial Intelligence works, why the system makes a recommendation or a decision of a certain kind in a given situation, and what data is processed or, if relevant, generated. Only in this way can it ultimately be ensured that Artificial Intelligence is able to find broad societal acceptance. In the current status of technical development, responsibility for the individual person and for society as a whole is of central importance, and the transparency of the processes and technologies in use are a critical factor in this responsibility. Artificial Intelligence will make the breakthrough when users have the feeling that they can trust this technology and can understand its behavior or, in certain contexts, can understand how mechanisms can be influenced. The protection of trade secrets and personal data must be taken sufficiently into account for this, so that in certain cases, new mechanisms will be required for the analysis and assessment of the work of Artificial Intelligence.

- **Usage scenarios for Artificial Intelligence must be concretely specified**

The use of Artificial Intelligence is frequently discussed on too abstract a level. However, the many usage scenarios, often already realized, require specific attention and valuation. Today, intelligent and self-learning systems are already frequently in use in medicine, for example for the analysis of CT images. Digital assistants are providing household support and are already capable of taking on central tasks in the logistics sector. Digital platforms are also, to a certain extent, making use of systems for the identification of key words and sentences in order to filter out specific content. A completely new area of activity which is still largely unexplored is the analysis of geo-data with the help of Artificial Intelligence for use in public administration.

To what extent this AI-supported process may generate a problematic interplay with fundamental rights and constitutional principles must be investigated. For this, in particular, aspects relating to the context of self-learning algorithms that can in certain circumstances make autonomous decisions, and the potential for excessive filtering as a preventative measure, need to be deliberated on in detail. But even simple filter technologies can create a negative impact

This being the case, the responsibility of the use of such technologies must be discussed. As a result of the very complex situation and the enormous sensitivity, there needs to be a broad discussion regarding to what extent Artificial Intelligence can be used, not only in social networks and in the media, but also in the administration of justice or in the context of administrative decision-making. The socio-economic interdependencies of improved robotics with the aid of Artificial Intelligence also need to be addressed – for example, in the areas of self-driving cars and automated delivery drones, but also in state and security policy contexts in terms of administrative processes and risk prevention.

- **Carefully examine legal framework for Artificial Intelligence**
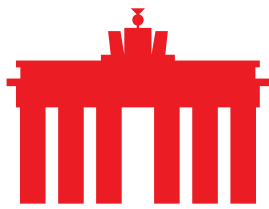
Artificial Intelligence is a cross-sectoral technology that makes use of both theoretical computer science and data analysis, as well as of further techniques in some cases. With the aid of today's high level of interconnectivity and processing power, Artificial Intelligence is now accessible for a broad spectrum of applications. This complexity and cross-sectoral nature must be taken into account in discussions regarding the need for new regulatory stipulations. Alongside this, further areas of application and usage for Artificial Intelligence, such as the heath sector, need to be looked at more intensively and brought into the discussion at an early stage.

The call for the use of the possibilities of automatic filter technologies has also been reinforced in the debate around the further development of the e-Commerce Directive. Additionally, the use of Artificial Intelligence is being postulated with regard to the filtering out of illegal content, as is it for the protection of intellectual property. The first companies are already providing filters for the identification of certain content. It is to be assumed that the possible and inexpensive use of Artificial Intelligence with self-learning algorithms will increase the pressure on platform operators to proactively strengthen their actions against certain content. Through the advancing development of the technology, this could be broadened to cover further areas such as the news sector in the identification of fake news and hate speech and their distribution paths. Here, fundamental rights such as freedom of the press, the right to informational self-determination, and the right to self-determination must also be taken into account in the context of the constitutional division of powers.

In the advancing development, what also requires deliberation is the nature of the legal relationship which Artificial Intelligence should have vis-à-vis the existing forms of the natural and legal person. The existing legal framework for a range of areas must be examined and adapted if relevant and current debates on the topic of the e-person should be taken up in a meaningful way.

- **Recognize the social and economic value of data**

A central component of successful Artificial Intelligence is the data that is made available to systems or that is generated by them. This discussion is also multi-layered, and touches on partly unproblematic, but also partly sensitive data and fields. The criticism of the use of pre-crime systems in the USA in particular and, in a much more limited form, also in Germany, revealed the concerns residing in the population. The German federal government's data ethics commission and the plans for a data law, as well as the AI commission of enquiry of the German Bundestag, each want to address this topic. The challenge of a responsible data policy is, on the one hand, to comply with the high requirements for data protection, as is required by the General Data Protection Regulation (GDPR). On the other hand, the challenge entails doing justice to a high-quality data basis which is as comprehensive as possible, with which Artificial Intelligence not only trains, but is also supplied with in operation. Given that the fields of application and the breadth of use of Artificial Intelligence is very wide-ranging – e.g. medicine, traffic, and logistics – the challenge here is to create rules that have general validity while at the same time being comprehensible for all those involved (research and academia, industry, administration, and citizens), and that simultaneously establish a high quality and a high level of trust in digital services. The GDPR, its measures and principles, offer a good foundation for this. A further area-specific expansion and regulation of data protection should be avoided if possible. The societal value of data must be accorded due consideration in this debate. Information that, for example, enables
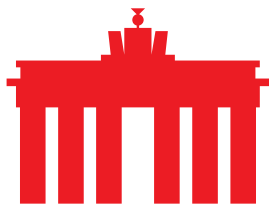
Artificial Intelligence to better detect tumors on x-ray images can certainly, on a pseudonymized level, touch on personal data, but ultimately can also contribute to better healthcare for all contributors, if it is used as training material for the corresponding algorithms. Especially in the light of this, an in-depth discussion is required as to which data may be used, and to what extent data may be used for what purposes. This debate must also give due regard to the fact that Artificial Intelligence can not only process data, but also generate data itself by means of correlation or through analysis. The societal value of data for Artificial Intelligence is therefore at least as important as the debate as to under which premise the commercial use of the data can take place.

- **Reliable Artificial Intelligence encourages trust in sensible and suitable usages and strengthens acceptance**

Ensuring a higher level of acceptance of Artificial Intelligence demands a high quality of algorithms, AI systems and applications, and the responsible and human-centric development and usage of Artificial Intelligence. The development of robust algorithms according to high ethical and data protection-compliant standards can represent a competitive advantage for Germany and Europe. The quality specification must be able to handle the occurrence of errors and anomalies, and if necessary also incidents, both in the context of the development of Artificial Intelligence and in its operation. This is a must, given that the technology field of Artificial Intelligence and the technological competence in this segment will become increasingly more important for Germany as an industry location. The actual use of Artificial Intelligence and its usage contexts and scenarios must therefore be communicated and explained in an understandable way for users and data subjects, so that the added value of Artificial Intelligence is easier to ascertain. Systems in use should offer the possibility to trace their data basis, premises, quality, and mode of learning. Economic and industry initiatives can set a positive example here, in order to counteract potential restrictive innovation and market-inhibiting ex-ante regulations or bureaucratic approval processes. High quality, the transparency of the mode of operation, and the safe and beneficial use of Artificial Intelligence for people are in the interests of the developers, providers, and operators of the systems.

- **Artificial Intelligence as a factor for IT security and protection**

Against the backdrop that Artificial Intelligence not only processes sensitive data but can also, if necessary, generate data itself by means of correlation, the aspect of security takes on central importance, in two respects: Firstly, the securing of the systems and applications (integrity) is itself central; and secondly, Artificial Intelligence can make a contribution to the automated detection and defense against dangers and attacks. The security of networks and the elimination of vulnerabilities and errors in computer programs that enable attacks can represent an improvement in security for all, given that it is possible to react more quickly and automatically to attacks on IT systems.

- **Artificial Intelligence as an industry and locational factor**

The development of AI applications and systems and obtaining core competencies in this technology field can represent an important competitive factor for Germany as an industry location. However, Artificial Intelligence is still very strongly perceived as

a topic for academia and research. This is also mirrored in the German federal coalition agreement and the federal government's key points on the AI strategy. An approach is urgently needed that does justice to a strong use of Artificial Intelligence in the industry context. Some industry areas – such as the financial and banking sector, customer care services, logistics, accounting, air and space travel, and the traffic telematics for traffic control and planning in the public and private sector – already use algorithmic and mathematic-technical processes. At the same time, they have not yet penetrated the greater part of the economy, which is currently still preoccupied with the digitalization of business processes. For commercial processes in the service provision sector and in industry, the use of Artificial Intelligence will become elementary. If German companies are to remain competitive in the global marketplace, then they must rapidly adopt and integrate the use of AI technologies. For Germany as an industry location, core competencies in the area of the key technology Artificial Intelligence are of strategic importance.

Politics must offer a reliable and appropriate framework for the use of Artificial Intelligence, in that support is given for innovation-friendly and market-oriented regulatory mechanisms, and that the use and testing of Artificial Intelligence in various branches of industry is non-prescriptively supported and promoted.

- **Confer the necessary attention and importance to the effects of Artificial Intelligence on the world of work and the education industry**

With the further development of Artificial Intelligence and its applications in the economy, industry, and service provision sector, the world of work will also change. Already today, automated process help people at their places of work. This development will be further driven forward as Artificial Intelligence itself develops. Education, further education, and job profiles must therefore be more strongly oriented towards the fact that, in future, work will be more frequently shaped through the co-working with and support of Artificial Intelligence. For certain areas, it should be examined whether the existing job descriptions and job profiles can be maintained, or whether there is need for modifications. The modernization of job profiles must occur rapidly, in order to avoid potential undesirable effects on the employment market.

Guidelines for the Handling of Artificial Intelligence

The following aspects need to be taken into account in the further handling of Artificial Intelligence:

- The technology field Artificial Intelligence and the technological competence in this segment are becoming increasingly more important for Germany and Europe as industry locations. The development of algorithms, AI systems, and applications according to high ethical and data protection-compliant standards can represent a competitive advantage for Germany and Europe.
- To encourage the rapid adoption and testing of Artificial Intelligence, ex-ante regulations should be avoided. An innovation-friendly and market-oriented legal framework should be striven for, in order to be able to non-judgmentally exploit the potential of Artificial Intelligence.
- The legal framework conditions for the use of Artificial Intelligence must be sound. With a view to possible new requirements, a further development of
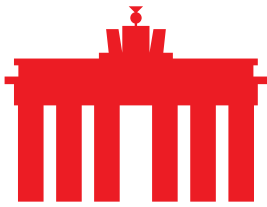
the existing legal framework should be very carefully examined. This is the case in particular for area-specific rules. Existing legal principles, especially in the area of the responsibility for the operation of the systems, prevail also against the backdrop of Artificial Intelligence.

- Initiatives for the promotion of reliable transparency of Artificial Intelligence, its mode of operation, and the data that it collects, processes, and generates should be supported by politics and industry. They make a central contribution to the trust accorded to developers, providers, and operators.
- The whole of society needs to be involved in the discussion regarding possible applications and usage scenarios of Artificial Intelligence and the benefits that Artificial Intelligence can have for society and the economy.
- The economy and industry can make an important contribution to the acceptance of Artificial Intelligence through initiatives for ensuring the quality and the method of learning and working of their systems and applications.
- Initiatives to promote the securing of Artificial Intelligence against abuse and against discriminatory use must be supported and funded.
- Measures for ensuring quality in Artificial Intelligence, especially in the occurrence of anomalies, incidents, or errors must be taken into account, both in the development and in the operation of such systems, and can represent an important contribution to the strengthening of robust systems with which humans can safely interact.
- The promotion of Artificial Intelligence in the area of IT security, both for strengthening the detection and defense against attacks, and for eliminating and detecting vulnerabilities and for combatting abusive user behavior or fraud must be supported and funded.
- Requirements for job, educational, and further educational profiles must be more strongly oriented towards the application of Artificial Intelligence, in order to cushion non-intended effects on the employment market in due time.
- The access to and use of data for Artificial Intelligence both for training and operation must be discussed and if necessary newly defined against the backdrop of data protection, and in terms of the promotion of general well-being.
- The insights from academic endeavors in the area of Artificial Intelligence should provide a meaningful contribution to the well-being and quality of life in Germany. The use of Artificial Intelligence should therefore be evaluated, if necessary case-by-case, and equipped with clear standards of conduct measures, for both the producer and the user. Cooperation in the exchange of knowledge, experience, data, and technologies should be strengthened, and initiatives for the improvement of digital infrastructures that are central to the use of Artificial Intelligence must be driven forward and promoted.
- The importance of Artificial Intelligence as a key technology must be acknowledged and promoted as an economic and locational factor of the future. Alongside pure research at universities and research institutes, the transfer to industry is also important and must be promoted.

About eco: With over 1,000 member companies, eco is the largest Internet industry association in Europe. Since 1995 eco has been instrumental in shaping the Internet, fostering new technologies, forming framework conditions, and representing
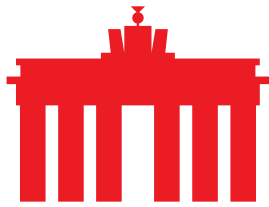
the interests of members in politics and international committees. eco's key topics are the reliability and strengthening of digital infrastructure, IT security, and trust, ethics, and self-regulation. That is why eco advocates for a free, technologically-neutral, and high-performance Internet.