

Artificial Intelligence (AI) Views of the European insurance industry



Artificial intelligence (AI) carries enormous transformational potential for industry and society. Its benefits have been widely recognised, and it has become an area of strategic importance for the EU and a key driver of economic development. However, as with any technological development, it also comes with challenges that need to be assessed and, where relevant, addressed by policymakers and businesses.

Insurance Europe welcomes the work done by the European Commission high-level expert group (HLEG) on AI and its policy recommendations for Trustworthy AI¹, in particular acknowledging the need to foster a principle-based approach to regulation and to avoid unnecessarily prescriptive rules, which could harm Europe's digital sovereignty and increase its dependence on technology and services from other regions, thereby putting European businesses at a competitive disadvantage. In this sense, and as highlighted by the OECD in the development of its Recommendation on AI², any proposed framework or standards on AI need to be "sufficiently flexible to stand the test of time in this rapidly evolving field".

Insurance Europe supports actions at EU level to promote and support the development and uptake of AI, as well as actions to facilitate access to and use of data, which is essential for the further development of AI systems.

Any future regulatory framework for AI needs to be consistent with the overall objectives of the EU to promote and encourage innovation, while ensuring respect for European values and principles.

Use of AI in the insurance sector

The benefits that AI can bring to insurers, their customers and society as a whole are many and varied, depending on the specific use case at hand. According to the World Economic Forum, AI will help insurers to predict risk with greater accuracy, customise products and use enhanced foresight to rapidly deploy new products in response to emerging risks. In its [2018 report](#), the World Economic Forum identifies numerous potential AI applications in the insurance sector in the coming years, which include:

- improve underwriting, pricing efficiency and accuracy;
- increase capital efficiency through better risk modelling and real-time risk monitoring;
- process claims instantly;
- increase the efficiency and capabilities of sales agents;
- improve scale efficiencies to enter new markets;
- provide predictive analytics to clients that help them better understand their risk;
- introduce new pricing and payment models; and
- develop modularised policies.

AI applications in the insurance sector are already giving rise to efficiency gains, helping to improve customer service and offering more insight into customers' needs, and helping to prevent fraudulent transactions. Some of these benefits are explored further in the sections below.

¹ <https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai>

² <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449>

Many practical applications of AI depend on the availability of high-quality data or use machine learning or deep learning techniques to achieve their results and improve their performance over time. AI also allows for the use of a variety of data sources (eg images, location data, sensor data) to enable real-time provisioning of insurance policies and instant claims handling.



Improved customer experience

Consumers are embracing innovation in insurance, particularly where it makes their interaction more convenient and improves communication. They want new products and services that respond to their needs and the added convenience of interacting with their insurers when, how and where they want, making it more of a day-to-day experience.

The use of consumer-facing chatbots, for example, is used by insurers across a range of different platforms. Chatbots are available around the clock and can help to simplify and speed up the interaction between insurers and their customers and improve communication.

In addition, the application of AI in semantic text analysis can allow insurers to extract relevant information from dialogue with customer service chatbots to gain better insights and better understand their customers' needs provided that the customer has agreed to such analysis.

Robo-advice, or automated advice, is the term used where financial advice is provided to consumers and businesses without, or with very little, human intervention and providers rely instead on computer-based algorithms and/or decision trees. The front-end of the robo-advisor often comes in the form of a dashboard within the personal customer profile or a chatbot powered by AI and asking questions about the customer's financial situation, preferences and choices. Depending on the type of technology used, the robo-advisor will give recommendations based on the answers provided by the user or by leveraging other types of data as well (eg bank data). As the technology evolves further, there will be an even greater potential role for AI and machine learning to support consumers in their decision making. However, for the time being, these systems are still in their early stages and not yet in widespread use.



More effective fraud detection

Insurance fraud undermines the pooling of risk because it depletes the funds paid by honest customers, causing them to face higher insurance premiums and leaving insurers with less capacity to deal with genuine claims quickly. Detected and undetected fraud is estimated to cost European insurers and their honest customers €13bn a year.

AI-driven fraud detection solutions can tackle the problem of fraud by analysing massive amounts of data from multiple sources in order to spot fraudulent claims. These tools can enable insurers to spot and flag unusual patterns that a human might miss, potentially helping to reduce these huge costs, as well as the level of customer premiums.



Better risk monitoring and prevention

As the insurance industry focuses more on prevention, AI systems can be used to help monitor and predict risk, as well as to provide advice to customers on how to reduce risk going forward. This can in turn help to reduce the frequency and severity of losses over time. AI applications can also offer the opportunity for lower insurance premiums for customers.

For example, AI can be used to help better serve car insurance customers. AI solutions can be used to monitor and analyse customers' driving behaviour based on the data collected by smartphone apps or plug-in solutions. Customers can then receive a discount on their premium, depending on how they drive, and can also get further insights into their driving behaviour to help them improve over time.

Challenges faced by the insurance sector

Lack of an effective European regulatory framework ensuring access to and use of data

Access to data and data sharing are key enablers for the development and improvement of AI systems. However, the effectiveness of any algorithm is dependent on the quality, accuracy and completeness of the available data.

In this context, public institutions can provide invaluable sources of data due to their comprehensiveness and the quality of the datasets. However, one of the major challenges faced by insurance companies when developing their AI systems is the restricted or limited access to data from the public sector. Very few countries in Europe have a regulatory framework for data sharing with companies, while some jurisdictions are further limiting access to the data stored by their public institutions with a consequent negative impact on innovation.

Another challenge in this context is the methodology used by public institutions to compile data. In order to provide as much societal benefit as possible, such public sector datasets should be made available free of charge and in a machine-readable format that would allow for their subsequent use in AI applications.

It should also be noted that the data needed for some AI applications can be highly concentrated among a small number of entities with dominant market power, raising questions as to how access to non-personal data in private hands should be governed. The insurance industry's dependence on third party providers or vendors for data sets can result in insufficient access to data that would otherwise help to improve AI systems and better serve customers.

In addition, technical issues such as interoperability and standardisation of data should be addressed in order to ensure that such datasets can be used to their full extent.

Need for a holistic approach

In addition to promoting innovation and respecting European values, policy makers will need to follow a coordinated and holistic approach to AI policy and regulation to ensure an outcome that is consistent with European objectives and avoids excessive regulatory burden.

The development and use of AI is already covered by a wide body of existing EU legislation that addresses many of the potential risks and challenges, and this is further complemented by national regulatory frameworks. The EU legal framework covers relevant areas such as fundamental rights, privacy and data protection, as well as product safety and liability. A horizontal, proportionate and principles-based framework that seeks to build upon existing EU and national regulatory frameworks, addressing any potential gaps where necessary, will help to support the development and uptake of AI and help to avoid unnecessary burdens. In addition, policy makers should examine where existing legislation may actually create barriers to the use or development of AI.

For example, the data minimisation principle under the General Data Protection Regulation (GDPR) conflicts with the realities of AI development. In order to develop AI applications that are accurate, it is essential to have large amounts of quality data to train the algorithms. This also helps to reduce the risk of bias in the outcomes of the AI application. However, the GDPR establishes limits on data usage, which does not take into account the needs of reliable AI development and may inhibit the Commission's aim to make Europe a world leader in the development and deployment of AI. It is therefore worth considering the recommendations of the [European Commission Expert Group on Regulatory Obstacles to Financial Innovation \(ROFIEG\)](#), which propose issuing guidance on the application of the GDPR in relation to the use of new technologies in financial services, eg to allow firms to use and experiment with different sources of information in combination with AI³.

Any future horizontal framework should also take a risk-based approach that is tailored to the particular use case of AI, as different applications of the technology will have different impacts and potentially will require different means by which to apply the principles.

³ See for example Recommendation 25 on GDPR and new applications of technology. Further examples of barriers to the development of technology in insurance arising under the GDPR can be found [here](#).



Need for collaboration between national competent authorities (NCAs)

A key challenge for the industry relates to the current (lack of) collaboration between competent authorities in the innovation space. It is important that the respective regulators for conduct of business, prudential, competition and data protection collaborate in one hub or forum. There is a need for all competent authorities to work more closely together to help further develop the digital single market for financial services. In this respect, it could be useful to ensure that NCAs are equipped with a mandate to be innovation-friendly.

Without close collaboration between NCAs, the EU runs the risk that any regulatory framework for AI is interpreted differently across member states, leading to fragmentation of an otherwise harmonised framework.

Ensuring an appropriate principles and risk-based framework for AI

The insurance industry supports the adoption and deployment of ethical, trustworthy and human-centric AI via an appropriate and proportionate principles-based framework. As a starting point, it is key that policymakers carefully examine how certain principles might already be reflected in the current regulatory and legislative framework. This aspect is fundamental and was carefully stressed by the HLEG on AI in its policy recommendations to establish an appropriate governance and regulatory framework on AI. In addition, such a framework should follow a risk-based approach and use cases should be prioritized and treated differently based on their potential to cause harm. The scope should be limited to only those AI applications which clearly produce significant effects.

Many existing regulatory or supervisory frameworks on the use of AI share a common set of high-level principles, many of which are not specific to AI and are in fact addressed across other sectoral or horizontal legislation in the EU. For example, the GDPR is at its core an ethical and principle-based Regulation, containing core principles that are commonly found in existing ethical guidelines on AI, such as transparency, fairness and accountability.

In the context of financial services legislation, and insurance in particular, principles such as transparency, fairness and ethics are also to some extent already addressed by rules on conduct of business and disclosure. Moreover, rules on advice apply wherever a personal recommendation is provided to a customer, regardless of whether that recommendation is provided by a human or AI actor⁴.



Transparency and explainability

Transparency and explainability are key elements to facilitate improved public understanding and trust regarding the use and application of AI. Ensuring clarity as to when AI is being used and for what purpose will not only help to enhance consumer trust in the technology but also facilitate its overall uptake by industry. The provision of meaningful, easy-to-understand information will also contribute positively to more informed choices for consumers.

Transparency can have numerous meanings but in the context of AI systems it should be understood as disclosing when AI is being used (eg to make a recommendation) or if a consumer is interacting directly with an AI-powered agent (eg a chatbot). Any disclosure should be proportionate to the importance of the interaction. Transparency further means enabling people to understand how an AI system is developed and operated in the relevant application domain, for example whether and how AI is used in a decision-making process.

However, it has also been acknowledged that detailed transparency requirements may actually create confusion or even pose risks to the security of the AI system itself by making it more vulnerable to attack. It is important to balance these considerations in determining the appropriate level of transparency in the use of AI.

⁴ More information on the insurance legislative framework can be found in Insurance Europe's Q&As on the use of Big Data in insurance ([link](#)).

Explainability means ensuring that companies are able to explain how they use AI in their business processes and, where reasonably appropriate, how these applications function. It also involves enabling people affected by the outcome of an AI decision-making process to understand how it was arrived at. This entails providing easy-to-understand information that could also enable anybody that may be adversely affected to challenge the outcome, where reasonable and appropriate to do so.

However, explainability may not always be appropriate in all cases. The degree to which explainability is necessary is highly dependent on the context (ie the significance of the outcome) and the severity of the consequences in the event that an erroneous or inaccurate outcome has been arrived at. In some cases, requiring explainability may have an impact on the accuracy and performance of the AI system, or create privacy or security implications. For example, the Monetary Authority of Singapore (MAS) acknowledges in its guidelines⁵ that a company using AI for fraud detection purposes should be able to decide not to share information or provide explanations about the model it uses, in light of concerns over model manipulation or exploitation.

It should be noted that the GDPR already requires that data subjects receive information about the existence of automated decision-making, as well as meaningful information about the logic involved and the significance and consequences for the data subject. Data subjects may therefore seek clear explanations about the data used in any AI decision-making process and how this data affects the outcome. However, clear explanations do not imply or necessitate exposure of intellectual property or the publishing of proprietary source codes. Clear explanations in the context of the use of AI should instead focus on facilitating the data subject's understanding of how and when a company uses such technology.

The focus of any principles on transparency and explainability should therefore be on providing meaningful information and clarity about the AI system and its decisions or recommendations. This should not involve the disclosure of source code or other proprietary code, which would be too technically complex to be useful or aid in consumer understanding of the outcome. It may additionally be subject to intellectual property rights, including commercial or trade secrets. The aim should therefore be to facilitate public understanding of algorithmic outcomes, rather than to seek disclosure or transparency of the algorithm itself.



Fairness

In order to enhance trust and confidence in the use of AI, it is important that AI applications are perceived as being fair and do not discriminate against certain groups of customers. Fairness can be taken into account in the design of the AI application as regards the selection of the input parameters to be used to try to eliminate potential sources of bias.

However, this does not imply that there cannot be differences in treatment between different groups of customers based on relevant risk factors, which is a central aspect of the insurance business model. Insurance is the business of assessing risks and pricing policies accordingly. Differentiating between groups that present higher risks and groups that present lower risks in a risk pool is central to how insurance works. Care should be taken not to confuse differentiation with discrimination when discussing fairness in an insurance context. Differentiation means treating comparable situations in the same way and different situations differently; unlike discrimination which is treating comparable situations differently – resulting in poor customer outcomes.

The approach of the Monetary Authority of Singapore (MAS) recognises that offering differential treatment to different groups of people is an existing practice and part of current business models, and stresses that AI-driven decisions should not disadvantage any particular individual or groups of individuals, *unless these decisions can be justified*. According to the MAS, the use of personal attributes as input factors for AI-driven decisions is justified, for example, in order to provide more relevant product offerings for different customer groups, such as offering retirement-related financial services and products.

It should also be stressed that many companies that deploy AI applications already have in place review processes to detect and minimise unintentional bias.

⁵ [Principles to Promote Fairness, Ethics, Accountability and Transparency \(FEAT\) in the Use of Artificial Intelligence and Data Analytics in Singapore's Financial Sector](#)



Accountability

In the context of ethics and AI, accountability is the term generally used to refer to the expectations towards companies for the proper functioning of their AI systems. In the case of an AI application not functioning as intended or giving rise to an incorrect outcome, it can also imply taking action to ensure an improved outcome in the future.

Within the insurance industry, accountability forms part of a company's own internal governance mechanisms, which is addressed in the Solvency II Directive and ensures proper oversight and delegation of responsibilities for the adoption and application of AI systems. In this way, accountability also provides a mechanism by which to further facilitate trust and confidence in AI systems.

As part of this framework, companies should also ensure that data subjects are provided with appropriate channels through which to enquire about, submit appeals for, and request reviews of AI-driven decisions that affect them.

Outsourcing requirements also safeguard that insurers are accountable when they outsource certain functions to third parties.



Ethics

Insurance Europe welcomes the work done at EU level by the European Commission HLEG on AI and its recommendations for trustworthy AI, which sets out relevant ethical principles to ensure that AI systems are developed, deployed and used in a trustworthy manner.

As the use and application of AI systems becomes more widespread, companies should ensure that the outcomes of these systems do not violate their ethical standards, values and codes of conduct. Customers should be able to trust that they are not mistreated or harmed because of a company's use of AI and that any AI-driven decisions are held to the same ethical standards as human-driven decisions.

In addition to these moral and ethical considerations, the GDPR already contains relevant principles in this context: (i) lawfulness, fairness and transparency, (ii) purpose limitation, (iii) data minimization, (iv) accuracy, (v) storage limitation, (vi) integrity and confidentiality and (vii) accountability. The sharing of insurers' experiences complying with the principles contained in the GDPR can be a useful exercise that can translate across from a compliance perspective to assessing what is an ethical use of AI in the insurance sector.



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