RELX Position Paper on Artificial Intelligence.
In response to the European Commission's White Paper on AI – A European approach to excellence and trust.
11 June 2020

RELX welcomes the opportunity to provide input to European Commission's *White Paper on Artificial Intelligence – A European approach to excellence and trust*. The White Paper addresses many of the key topics relevant to the continued deployment of Artificial Intelligence (AI) across Europe, ensuring the benefits of AI are achieved for the economy and society, as well as identifying and acting upon the risks which exist with the development of new AI-enabled systems. The White Paper represents a significant milestone in the policy and regulatory debate surrounding AI, and RELX looks forward to engaging with the Commission and other EU institutions and stakeholders as policy is further developed.

RELX is a global provider of information-based analytics and decision tools for professional and business customers across a range of sectors, including financial services, science, technology, medical, healthcare and energy. We employ 33,000 people worldwide and support customers in 180 countries. We utilise technology and data to help our customers improve their decision making across the sectors we serve. We help scientists make new discoveries, doctors and nurses improve the lives of patients, lawyers win cases, prevent online fraud and money laundering and insurance companies evaluate and predict risk.

AI is a key interest for RELX's businesses. With an annual investment of €1.2 billion into technology and with 9,000 technologists employed, RELX is both a significant consumer and developer of the latest technologies, including techniques which fall within the broad definition of Artificial Intelligence. Our technology is developed across the world, with a significant number of our data scientists and developers in Europe, with tech hubs in London and Amsterdam. We use machine learning and natural language processing for a range of activities. For example, within Elsevier in response to the current Covid-19 pandemic we are using machine learning to surface research articles relating to covid-19 and to prepare them for peer review as quickly as possible. We also use AI technologies to identify and prevent fraudulent transactions in various sectors. This includes processing up to 100 million transactions per day in ThreatMetrix's Digital Identity Network. We also note the Commission's interest in the White Paper in the UN Sustainable Development Goals (SDGs). RELX has undertaken significant work on the SDGs through our RELX SDG Resource Centre.

As well as providing a response to the Commission's consultation questionnaire we also wanted to also take this opportunity to set out some of our broader thinking on the Commission's proposals specifically and our wider thoughts on AI.

Definition of AI

AI is a broad discipline, made up of a collection of different technologies, and has various definitions. These tend to be extensive, covering a range of technical approaches including machine learning, natural language processing and text & data mining, among other techniques.

The AI debate is global, and as national governments and international organisations have started adopting varying definitions for AI it would be helpful if there was an attempt to find agreement on a universal definition.

We welcome the EU High Level Expert Working Group definition of AI, which is as follows:

"Artificial intelligence (AI) systems are software (and possibly also hardware) systems designed by humans 3 that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal. AI systems can either use symbolic rules or learn a numeric model, and they can also adapt their behaviour by analysing how the environment is affected by their previous actions. As a scientific discipline, AI includes several approaches and techniques, such as machine learning (of which deep learning and reinforcement learning are specific examples), machine reasoning (which includes planning, scheduling, knowledge representation and reasoning, search, and optimization), and robotics (which includes control, perception, sensors and actuators, as well as the integration of all other techniques into cyber-physical systems)."

This could be a useful starting point for discussions.

An ecosystem of excellence

In its White Paper the Commission has proposed a series of actions to help ensure Europe remains a world-leader in the development and deployment of AI and this is welcomed. We are encouraged that the Commission is proposing a wide package of complementary, inter-related measures, rather than a piece-meal approach.

In addition to the Commission's proposals, we would propose the Commission run an educational and communications campaign to help improve citizens' understanding of the purpose and use of AI. It is crucial that individuals feel safe in their interactions with AI not solely through important regulatory safeguards, but also through better understanding of how the technologies work. Whilst education is not a sole competence of the EU, there is a role for the Commission in bringing together and sharing resources including best practices and tools in both the public and private sector that can be tapped into. This could be accompanied by a focused communication strategy so that citizens can be made aware of what they can access to assist them in their understanding. Providing citizens with the ability to coherently balance the risks involved with interacting with AI, and understanding the benefits of doing so, will be crucial to broader uptake of AI.

The White Paper references the creation of European Data Spaces as part of the coordinated plan with member states, to create an ecosystem of excellence. We welcome efforts to improve the use of data within Europe and attempts to further develop Europe's data economy and there are a number of positive steps the Commission could take to foster further innovation in this area, such as encouraging greater voluntary data sharing initiatives, built on industry standards and the Commission could play a helpful role in facilitating that. We would strongly encourage the Commission to adopt a collaborative approach with industry as it seeks to further develop its thinking on the European data spaces and RELX stands ready to contribute to those efforts. There is also a positive role for the Commission to continue to provide open government data, and work with the Member States to do the same. RELX has also responded to the Commission's consultation on the European Data Strategy.

We fully support the Commission's aims to strengthen Europe's innovative research environment. Elsevier's 2018 AI report demonstrates that Europe continues to have a strong presence in AI research. Elsevier's report also provides helpful context in how different global regions are approaching AI research. For example it demonstrates that China has shown significant growth in its scholarly output but still has a relatively low citation rate indicating Chinese research has regional rather than global reach, which is also highlighted in the low international collaboration. Meanwhile the report shows the US corporate sector undertakes a lot of AI research and attracts talent however the diversity in AI

research is less than in Europe. Europe also benefits, as the report shows, from high levels of international collaboration. A new report from Elsevier looking at AI is due to be launched shortly.

With respect to the proposed lighthouse research centre, this initiative could be taken in a number of different directions which risks diluting its impact so should remain focused. Again Elsevier's 2018 report can provide evidence on Europe's current AI research trends, including areas which may require more attention. For example, the data shows that Europe has been losing AI research talent to the US in recent years. We'd encourage the Commission to carefully consider the responses it receives from academia to the lighthouse proposal to see how it could best contribute. We would support it focusing on issues which could have the greatest positive impact on the economy, such as environmental issues and health pandemics. The lighthouse should also be used as an opportunity to bring diverse voices into the AI research space.

An ecosystem of trust

The importance of high-quality AI

It is generally recognised that the outcomes from AI applications are only as good as the underlying data fed into the algorithms that make up the AI. Quality data inputs will have a much better chance of leading to quality outcomes, which should be the ultimate aim of both technology developers and policy makers. This is relevant to a wide range of factors relating to AI, including bias and discrimination, safety and accuracy. These elements are all rightly recognised in the Commission's White Paper as concerns relating to the development of AI systems. RELX suggests that one element missing from the debate is how to encourage high quality of data. This is an area which could set Europe apart from other regions of the world by guaranteeing an IP regime that incentivises creativity and ensures those breaking the rules are not rewarded.

An important part of this is through ensuring the information on which the AI systems are based is valid. This is particularly true when discussing AI systems in scientific fields. There must be a high level of confidence that the information being fed to algorithms is of the best quality. The importance of this should not be understated. To use an example from RELX's subsidiary company, Elsevier, a platform known as Entellect allows search and analysis across a wide range of databases to assist with drug development and clinical trials. When developing products which have the potential to deliver the most material impact on people's lives it is crucial the information is valid and of high quality. Intellectual Property, including copyright, has a clear role in incentivising investment into the creation of high-quality scientific research outputs.

Effective and understandable Intellectual Property frameworks are key to the development of AI systems themselves. Patenting is a key IP right in this regard. LexisNexis PatentSight utilises advanced technology to understand the innovation space, allowing its users to benchmark innovative strength, analyse individual patents or technologies - or even to forecast disruptive trends and create what-if scenarios, providing much better insight into what innovations are being developed. LexisNexis PatentSight's customers include Fortune 100, DAX and Nikkei customers, as well as the European Commission. LexisNexis PatentSight has not only solved the underlying, inherent quality problems of patent data, it also made it easily accessible, analysable and ultimately actionable - which makes it a perfect fit for AI applications.

Legislative approach and scope

Principles-based legislation

As we have indicated in our response to the Commission's questionnaire, RELX believes there may be some gaps in current legislation, and we support the Commission's measured approach in the White Paper (5.B) where recognition is given to the importance of the importance of assessing these gaps. Before this assessment is complete, we would urge caution in introducing a new horizontal piece of legislation seeking to regulate a specific set of technologies. Doing so could create legal uncertainty if it resulted in two separate laws seeking to regulate the same area, for example, product liability.

In recent years, the EU has demonstrated its leadership in approaching the regulation of new technologies. Principles-based legislation is a core foundation to many successful EU laws that have gone on to be exported worldwide. This approach has, at least in part, owed its success to ensuring its regulations are technology neutral, so that they remain relevant as technology continues to evolve. Specific technologies represent a snapshot in time, but the issues the Commission is rightly addressing far transcend any particular moment. We would encourage the Commission to remain committed to the concept of neutrality and not be tempted to regulate against a specific set of technologies, particularly when AI is still in such a state of flux. Otherwise there is a significant risk that such regulation becomes quickly outdated.

We believe as the Commission undertakes the review of existing legislation it will become clear that in most regards AI is already covered by current legislation and addressing new AI specific concerns could be best done though tweaks, rather than fundamental changes, to the current ecosystem, and welcome comments regarding this in Section 5 B of the White Paper. For example, AI applications are already covered by legislation including the General Data Protection Regulation (GDPR), the Product Liability Directive (PLD), the General Product Safety Directive and various national laws. Approaching new legislative requirements through amending the existing framework would have the added benefit of avoiding duplication and the creation of legal uncertainty.

For example, where the Commission has identified specific concerns relating to privacy or bias and discrimination, we believe the most appropriate place to address those concerns would be within the data protection framework, namely the GDPR. Such tweaks could include addressing the anomaly that certain provisions within GDPR make it more difficult to test for bias within training data due to the restrictions on collecting sensitive personal data which is required to test against.

Similarly, in relation to enforcement, where the Commission has concerns about safety and liability relating to AI applications, there are a plethora of sector bodies who have responsibility for these issues who would be best placed identify and mitigate AI-related risks, perhaps with some additional training and resource. We will address this further later in this paper.

Determining high-risk

RELX fully agrees with the Commission that the regulatory approach to AI should be risk-based and that the higher-risk AI applications should attract stricter requirements. In all cases it is important also to take into account the potential benefits of the application and ensure that these are not undermined by over-regulation.

We welcome the Commission's proposal to create a process for determining which AI applications should be considered high-risk. In order to fully consider what process to adopt to define high-risk, due consideration must be given to the broader process of regulatory oversight that would be

involved. We believe that the determination of risk should be undertaken by the companies developing and deploying the AI solution themselves, rather than by an external regulatory body. The regulator's role should be to assist companies in making their assessments, to act as a reporting centre in the event of concerns or failures, and to periodically audit and review self-assessment procedures. This approach mirrors the role of Data Protection Authorities with regards to companies' responsibilities under GDPR and works well.

We believe this approach is better than one in which a regulator performs an ex ante assessment. We are concerned that this would be overly prescriptive, prevent the suitable inclusion of context, avoid any discussion of the benefits an AI application might bring, risking the widespread adoption of AI and therefore the positive outcomes as a result. This would also be an enormous regulatory challenge for whichever organisation was tasked with approving all AI applications, even if they were restricted to a limited number of sectors.

The GDPR model has much to commend it. The introduction of Data Protection Impact Assessments (DPIA) has led to a voluntary change in the way organisations think about data protection, fully incorporating it into their governance and accountability structures. We believe such an approach can have the same benefits for AI applications.

Of course, DPIAs only deal with privacy concerns, however the principle of DPIAs can also be applied to other issues, such as safety. This would maintain the current, and effective, system of self-assessment and organisational accountability that has been so successful under GDPR, while also addressing the non-privacy concerns involved.

Similarly, we can look to GDPR for determining at what level an application becomes high-risk. GDPR's Article 22 introduces the concept of high risk, where processing of personal data can have a legal of similarly significant effect on a data subject. The fact that this already exists would help organisations operationalise new AI requirements as this test for high-risk is already known.

RELX would also like to highlight the fact that ultimately it is the specific context of an AI application that determines whether it is high-risk. The same AI application could be deployed in two different contexts and have two very different results, with different levels of risks attached. We would urge the Commission to seek to ensure that context is at the heart of the system to define high-risk.

Finally, in the Commission's White Paper there is an additional criterion, beyond the main proposal, for considering certain applications to be high-risk. This would provide regulators with the ability and power to designate any AI application as high-risk at will. RELX believes this is far too broad, lacks legal certainty and could result in significant lack of clarity for organisations. It also undermines the Commission's view that a sector-based approach is beneficial.

Compliance, governance and oversight

RELX welcomes the Commission's determination to avoid duplication in sector-specific governance functions and agrees the aim should be to add expertise to existing regulators and authorities rather than seek to establish a brand-new system of governance for AI. This would also recognise the fact that many of the issues the Commission is seeking to regulate are not new or caused by AI but may be impacted by AI applications.

We have already set out our concerns about the Commission's proposal for prior conformity assessments. However, we do think there is value in extending the GDPR 'prior consultation' concept to cover any new requirements for AI. This would provide organisations with the ability to conduct

self-assessments against the new regulatory requirements, mitigate the risks and if this is not possible have the ability to contact the regulator to discuss further options. This is the approach we would encourage the Commission to take.

The Commission proposes that if prior conformity assessments show an AI system does not meet requirements relating to training data, they will need to retrain the system in the EU, or on European datasets. We would urge the Commission not to pursue this course of action as there would likely be various unintended consequences as a result, such as potentially limiting the datasets available to companies and adding unnecessary compliance costs. The geographical location of data or an AI system should play no role in compliance, instead focusing on standards.

The datasets on which an AI application is trained is a product and business decision, and organisations will be driven by what their customers want. This is likely to require different datasets some of which will naturally originate from outside of the Europe. Additionally, there are various technical difficulties with mandating where and upon what data an AI system is trained.

Safety and Liability implications of AI

The Commission's White Paper sets out a number of concerns about the impact of AI systems on safety and liability and seems to propose that these issues should be addressed within a horizontal AI regulation, with the same regulatory requirements proposed for protecting fundamental rights.

RELX is of the view that the EU has a well-functioning liability regime which can be made to work for AI systems without the need for a fundamental rewrite. The White Paper makes note, while expressing concern about its limitations, of relevant existing legislation in this area, namely the Product Liability Directive (PLD). This directive has led to an effective liability system in the EU which protects consumers from harm and provides economic incentives to avoid causing harm.

Naturally, if as a result of reviewing existing rules it is found there is a genuine gap then new legislation may be required to fill that gap. However, even where AI presents a unique challenge, wider principles should not be replaced for a new set of technologies where the fundamental underlying issues are already addressed by the EU's regulatory framework. Instead consideration could be given to whether the existing PLD could be adapted to cover services which the Commission notes it traditionally hasn't covered.

Conclusions

RELX welcomes the opportunity to engage with the European Commission on this important topic. We believe the White Paper set out by the Commission is a useful starting point for many discussions around how we ensure AI development in Europe is encouraged and that risks are appropriately mitigated.

There are clearly risks with the development of AI. However, life is not, and has never been, without risks. It is important to recognise the positive force AI has the potential to play, while also suitably addressing valid concerns.

In this paper, we have set out how we believe it is best to achieve the balance required and stand ready to continue discussions with the Commission.