RELX Position Paper on AI

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Introduction

As governments around the world begin designing the regulatory frameworks for developers, producers and users of AI services, a number of public policy challenges are emerging as important areas of focused debate. This discussion paper sets out RELX's position on these key issues. If you are interested in seeing and learning more about RELX's Responsible AI Principles, which sets out our approach to AI you can find them here.

1. The Purpose of AI

CONTEXT

Whilst no technology should always be restricted to its original intended use, it is critical that policy-makers and developers have a clear vision of AI's purpose that serves as our collective north star to ground AI's development and use. With public concerns about possible directions of development prevalent in the debate, it further behoves companies to articulate the benefits to be derived from AI, and to be explicit in rejecting and working to prevent the pursuit of even potentially harmful pathways or uses.

RELX POSITION

RELX is a long-standing champion of technological innovation in alignment with and to advance public interest purposes. We embrace the Organisation for Economic Co-operation and Development's (OECD)'s [1] principles for responsible stewardship of trustworthy AI, notably its emphasis on AI supporting inclusive growth, sustainable development and well-being, and human centred values and fairness.

2. Definition of Artificial Intelligence

Different jurisdictions' policy-makers are using different definitions of AI, both within general policy positions but also increasingly in draft statutory language – most notably in the European Union and United States. The precise terminology used to define AI is vitally important. Different legal systems adopting wildly differing definitions of AI could create confusion and legal uncertainty, including about the rules of the road for AI development, and could hamper development and reduce user confidence.

RELX POSITION

RELX prefers the definition adapted by the OECD who see AI as *"a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments. AI systems are designed to operate with varying level of autonomy."*

This definition has the benefit of being focused on the unique qualities of a machine-learning or AI system, and distinct from existing data management and analytic systems.

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[1] The OECD's principles and definition of AI can be found here: Recommendation of the Council on Artificial Intelligence: OECD Legal Instruments

3. Transparency and Explainability

Transparency and explainability both present challenges to systems designers:

Transparency, at its most basic level is that users are made aware when they are engaging with an AI system. For example, ensuring a consumer knows they are interacting with a chat bot. Beyond this, transparency can include providing information about how an AI system works and how it has been developed and trained.

Explainability means that people understand how the AI system arrived at a particular result, so that people, by working back through the system, can understand from the inputs and process, why a particular decision came about. It could mean explaining the criteria that was used to arrive at a decision, the data/logic behind an outcome, and even what errors can creep in and how they can be corrected.

With regards to providing explanation, in many cases the detail of how an AI system works may require a very complex description, which may not be understood by all users. Hence there is often a trade-off to be made between explanation and comprehension.

A further obstacle to explainability lies in the design of systems. Some machine-learning models autonomously determine the relative importance of items of data and the weightings to be attached to them, and these decisions are not made visible even to the operator of the system. This "closed box" problem means that there is not always a clear pathway to trace between inputs to the system and a particular output decision. In these cases, a full explanation is not even possible.

RELX POSITION

RELX believes that in all cases users should be informed when they are interacting directly with AI systems and for what purpose. The nature of this information will be highly context-specific and it should be the operator of the system who decides how specifically to convey explanations to their customer or user. In some applications, such as image-based diagnostics used in an expert clinical setting, the importance and level of explanation may be higher than in those cases where the decision being made is relatively mundane.

There will be certain scenarios, such as combatting criminal fraud, where it would be inappropriate and self-defeating to give a detailed public explanation on the methods being used. As with personal data protection, these instances can be identified and treated separately.

RELX is implementing an explainable-by-design approach across the businesses. Information where required is provided on how the system was trained and designed. This process is an iterative one. In time we may move towards an approach in which end-users can access information about specific decisions.

4. Accountability and human oversight

AI systems are technological tools that can be a force for good, for example helping drive effective medical diagnoses, access to financial empowerment, or effective airline logistics. However, as with any technology, they could also potentially produce negative outcomes for individuals or wider society, whether by design or by misuse. The question of exactly who should stand accountable for any harm caused by especially foreseeable negative impacts is therefore central in the political and legal debates. By identifying a chain of accountability, users will know where to turn to for redress.

However, as with the challenge of explainability, the lack of an easily accessed chain of reasoning to a certain outcome can make it difficult if not impossible to get to the level of ascribing accountability.

RELX POSITION

RELX believes that whilst we take advantage of the benefits of technology, accountability is best ensured by requiring a suitable level of human involvement and oversight. The degree of human oversight should be proportionate and developed on a case-by-case basis after careful analysis of the system operation and the likely levels of harm which could feasibly occur.

5. Liability

The question of accountability is closely linked with that of liability. There is on-going debate on whether the emergence of AI requires the creation of new laws to address harms caused by new technologies, or if existing long-established legal frameworks in areas like contract, tort, consumer safety, product liability and criminal law can provide a sufficient basis.

The question is further complicated by the fact that AI is already operating in diverse policy fields, such as healthcare, transport and energy. A set of horizontal rules applicable to AI might struggle to adapt to the large operational differences between these and other sectors. Moreover, different legal jurisdictions begin from different points of principle: some follow a strict liability regime which only require that a harm has been caused for a user to claim redress; whereas others adopt a fault-based approach, where a specific individual has to be proven liable before a claim can be brought.

RELX POSITION

RELX believes that due to these varying sectoral and jurisdictional factors a mixed system is necessary in most instances to absorb potential liabilities arising from harms due to AI technologies. Legal systems will need to retain flexibility to pursue different actors in the value chain as usage evolves.

6. Fairness and Bias

All decisions, whether in public policy or commercial settings, run the risk of being affected by inadvertent bias. This danger is increased in AI systems where algorithmic models and data sets can themselves contain hidden traces of bias, not immediately apparent to designers or users, and further amplify such biases. To ensure fairness in AI systems these risk factors must be acknowledged, understood and mitigated.

An historic data set may reflect social biases of the past and can risk embedding those views in contemporary decision-making. Data may be non-representative or incomplete with regards to certain social groups. Equally it could be corrupted. Designers also have to be aware of the risk of bias by proxy, where data of one sort (for example an address) can be directly linked to another factor (such as socio-economic status).

It is also possible for bias to be introduced by design failures in the algorithm itself. This is most frequently due to human error in research design, or choosing to optimise for a particular outcome. The single most likely design failure is bias in sample data. A biased sample can only result in a biased algorithm. Producers of systems need to be conscious of the existing legal frameworks against discrimination and ensure that these principles are embedded into the service design.

RELX POSITION

RELX addresses these production risks through a series of quality control protocols. We focus on using and developing high quality data, taking care over selecting data points and ensuring rigorous testing through the life-cycle of the product. Multi-disciplinary teams including data scientists, ethicists, and compliance specialists work to test for and mitigate the risks of bias.

7. Privacy

Many AI products depend upon personal information in their development and operation. This presents the challenge as to the legal basis for the use of that data, and for its on-going security. These issues are already very familiar to governments and companies using extant data services, but given the increased scale and complexity of AI systems, the problem takes on a new dimension. The use of historic data is one cause of concern, especially where it is not possible to identify the data subject and the legal basis on which the data is being processed.

RELX POSITION

RELX is an experienced and trusted provider of information solutions and as such places great value on the proper handling of personal information. Our nine Privacy Principles[2] guide our approach to data protection and privacy across the organisation. We are committed to ensuring high levels of data protection in all the markets we operate in according to both the relevant jurisdiction and our own principles by which we strive to ensure we act as responsible stewards of personal information.

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[2] The RELX Privacy Principles are: accountability, design, purpose, transparency, choice, access, accuracy, security and disposal. Further detail is available here: Privacy principles – RELX - Information-based analytics and decision tools

8. Intellectual Property

The development of AI tools often requires access to large volumes of content to test and operate systems. This poses a potential challenge both to the developers of AI tools, who may not have ready access to data, and also to the owners of data, who face demands to make it available. Where the data or underlying copyrighted content from which useful data arises is protected by intellectual property rights (IPR), this can often trigger the charge that such rights are posing an obstacle to the development of AI. In some jurisdictions there are the further questions as to whether the output of AI systems is protected intellectual property and, if so, whether ownership can be ascribed to the AI system itself, or to the person or entity responsible for designing the system.

RELX POSITION

As both an owner of IPR and a lawful user of others' intellectual property, RELX believes that the current robust and flexible licensing system is the best way to ensure the flow of data through the AI development process whilst at the same time rewarding and incentivising investment in intellectual property. Further, we believe that widening exceptions in copyright law to allow unrestricted use of works for AI development purposes would undermine the regime, disincentivise investment in data collection and trigger further concerns around the protection and security of data. If they are to generate useful results, AI systems must be trained and operated on reliable data; and the best way to ensure the quality of data is through a copyright system which maintains incentives for producing it.

Conclusion

As a responsible developer and user of emergent technologies such as AI, RELX seeks to contribute our ideas and experience to the global policy-making process. We believe it is through sharing of perspectives and analysis of challenges that we can together work to ensure technological advancements benefit human beings, societies, and the planet we all share.

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