



AI, Machine Learning & Big Data

2019

First Edition

Contributing Editors:

Matt Berkowitz and Joshua Thompson

Global Legal Insights

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Published by Global Legal Group

GLOBAL LEGAL INSIGHTS - AI, MACHINE LEARNING & BIG DATA
2019, FIRST EDITION

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*We are extremely grateful for all contributions to this edition.
Special thanks are reserved for Matt Berkowitz & Joshua Thompson for all of their assistance.*

Published by Global Legal Group Ltd.
59 Tanner Street, London SE1 3PL, United Kingdom
Tel: +44 207 367 0720 / URL: www.glgroup.co.uk

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ISBN 978-1-912509-79-9
ISSN 2632-7120

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Printed and bound by CPI Group (UK) Ltd, Croydon, CR0 4YY
July 2019

Ireland

Kevin Harnett & Victor Timon
Maples and Calder

Trends

Setting the scene

Ireland is often referred to as the “Silicon Valley of Europe” as a result of the proliferation of global technology companies basing their European headquarters here. It boasts one of the youngest and best educated workforces in the world. It has low corporation tax of 12.5%, research and development tax credits of 25%, and a 6.25% preferential tax rate on income derived from qualifying intellectual property (through the so-called “knowledge development box”).

Therefore, it is not surprising that major corporations involved in artificial intelligence are using Ireland for research and development. In addition, there are home-grown artificial intelligence companies attracting the interest of major investors, as well as technology companies seeking to add skills and new products to their existing set.

IBM Ireland has a particular focus on the Watson AI platform. Accenture established its largest AI research and development hub in Dublin. In November 2018, Genesys, a US corporation which provides customer experience software to companies such as Microsoft and Oracle, announced the establishment of an artificial intelligence research and development centre providing 200 jobs in Galway on Ireland’s west coast, a fast-growing hub for this type of operation. Also, last year Google set up Launchpad Studio, a support hub for AI start-ups.

Nuritas, an Irish company which uses artificial intelligence and genomics to produce healthier food, received a €30 million facility from the European Investment Bank. It had previously raised €16.8 million in a Series A round led by Cultivian Sandbox Ventures of Chicago. Movidius, another indigenous company, which incorporates artificial intelligence into its camera technology, was acquired by Intel.

Ireland was the first country in the world to develop an industry-driven, post-graduate Master’s degree in artificial intelligence through the University of Limerick.

However, while we may be keen to research and develop AI solutions, Ireland is slower on average than its European counterparts to adapt AI in business. In a survey published by Microsoft and Ernst Young at the end of 2018, just 40% of Irish companies expected AI to have a high impact on their core business, as opposed to an average of 65% across the rest of Europe.

While there is an interest in AI at the c-suite level, there is also nervousness down the chain that “the robots are coming to take our jobs”. Indeed, the Irish Taoiseach (Prime Minister) alluded to this himself in a speech in 2018 when discussing driverless cars. He referenced the risk such developments posed to the 16% of the male population in Ireland that drive for a living.

An Irish Government survey in 2018 found agriculture, transportation and storage, and administration and support activities to be the most at risk from new technologies.

Notwithstanding that, there is a growing acknowledgement that while AI may replace some jobs, the AI solutions need to be built, operated and in some cases regulated, which will create new and different jobs.

Also, in a survey carried out by KPMG among Ireland's CEOs, 96% believe that AI will create more jobs than it will take away.

Types of technology being developed in Ireland

There is significant emphasis on machine learning which, because of its wide ranging applicability, can be used in a variety of industries. In addition to the global players operating in Ireland, indigenous companies are developing solutions for use in a myriad of fields including recruitment, healthcare, power generation, sport, legal cost analysis, transport, voice recognition and image recognition. A constant theme is a drive to improve the user experience.

User views on AI technology

While Ireland is not a major manufacturing economy likely to benefit from the use of AI in the production chain, nonetheless a recent survey of senior executives found that Irish companies see the most common gain to come from the use of AI as being the automation of existing processes. This was followed closely by prediction and the generation of insights. Projects currently underway include the standardisation of tasks in customer support, the automation of logistics and the prediction of customer behaviour.¹

In the same survey, 55% of companies canvassed expect AI to provide benefits in transforming products and services by, for instance, making offerings more data-driven and interactive.²

Unsurprisingly, given the increasingly widespread use of cloud-based solutions, there is a tendency for users to seek cloud-based AI technology, rather than a "bolt on" to their own existing in-house IT infrastructure.

A major perceived risk in the adoption of AI is the lack of current regulation or guidance. Companies fear that if they invest in something now which is allowed through lack of regulation, they may be prevented from realising that investment in the future, if it is subsequently prohibited by regulation.³

Government attitude and involvement

Ireland is one of the Digital 9 – those countries in Northern Europe ranked by the EU's Digital Economy and Society Index (DESI) as being ahead of their peers in the use of robotics, machine learning and AI (the others being Denmark, Finland, Sweden, Netherlands, Luxembourg, Belgium, the UK and Estonia). The Irish government hosted the annual meeting of those countries' government representatives in 2018.

There are two state agencies promoting AI in Ireland. Firstly, the Industrial Development Authority (IDA) is responsible for securing foreign direct investment into Ireland and highlights Ireland's AI capabilities as part of that brief. Enterprise Ireland (EI) is the government organisation responsible for the development and growth of Irish enterprises in world markets. It works in partnership with Irish enterprises to help them start, grow, innovate and win export sales in global markets.

The Technology Centre Programme is a joint initiative between both the IDA and EI to facilitate Irish companies and foreign multi-nationals working together on market-focused strategic research and development projects in collaboration with research institutions. This

has led to the establishment of CeADAR, the National Centre for Applied Analytics and Machine Intelligence. Its key agenda is to fund research in AI and create demonstrable working models.

However, beyond these state-funded organisations and initiatives, the Irish government as yet has shown little appetite to get involved in the debates around AI. Many countries in the developed world have in the last two to three years released national strategies to promote the use and development of AI. Ireland seems to be relying on the general guidelines produced by the EU. There has been much worldwide debate around the ethical issues which AI raises, and some commentators in Ireland bemoan the fact that the Irish government is not taking a lead or showing any direction in this important debate.

Regulations and government intervention

There are no rules or regulations that apply specifically to AI in Ireland. However, it is likely to become widely used in industries which are highly regulated, such as medicine. We will see in time whether its impact will require specific changes to those existing regulations.

AI and the law in Ireland

The advent of AI, Big Data and machine learning presents novel issues for which the Irish legal system is at best only partially equipped. Some of the key issues are explored below. Like technology in general, while the AI evolution moves ahead apace, the law is slow to catch up. Indeed, at the EU level, there is still no legal definition of AI. Insofar as the law is concerned, AI is largely a blank canvas. In exploring the issues below, we seek to add colour to that canvas by way of offering possible solutions to the various novel legal problems created by AI technology.

Ownership/protection

While intellectual property law can address some of the ownership aspects of AI, it most likely cannot be used to cover all of them. Therefore, absent any changes to current law, ownership may have to be a combination between intellectual property rights and contractual arrangements.

Copyright

Section 17(2) of the Copyright and Related Rights Act 2000 (“Copyright Act”) affirms the existence of copyright in literary works, the definition of which includes computer programs. Copyright can only be owned by a legal person – effectively an individual, company or partnership. It essentially has to be created by an individual (works created by an individual in the context of his/her employment being owned by the employer). Therefore, a machine that is creating content cannot be the legal owner of that content.

Section 21(f) of the Copyright Act states that copyright in computer-generated software is owned by the person by whom the arrangements necessary for the creation of the work are undertaken. A “computer-generated” work is defined as work that is generated by a computer in circumstances where the author of the work is not an individual.

It may be difficult in the context of an AI system to establish the involvement of a human in the creation of content. Some AI tools or systems will have the capacity to create content themselves. In such a scenario, it will be difficult to identify the individual who undertook the “arrangements necessary for the creation of the work”, in order to satisfy the authorship test in Section 21 of the Copyright Act.

In addition, a computer program is defined in Section 1 of the Copyright Act as being a program which is original, and which is the author’s own intellectual creation. It could be

difficult to argue that “self-taught” content produced by an AI system was any individual’s own intellectual creation.

It would seem that until such time as there is new legislation on the point, or until case law establishes some precedent, ownership of content created by an AI system may have to be covered contractually in order to provide some certainty. So, those entering agreements for the development or use of AI systems or content arising from them should consider relevant clauses to cover ownership, assignment and licensing.

Another point to bear in mind is that under Section 30 of the Copyright Act, protection is afforded to a computer-generated work for 70 years from the date it is first made available to the public. Where a copyright work is produced by a person, under Section 24 of the Copyright Act, copyright subsists for a period of 70 years after the death of the author, irrespective of when it is first made available to the public.

Patents

Section 9(2)(c) of the Patents Act 1992 (as amended) (“Patents Act”) states that a computer program is not capable of patent protection. The same is the case for mathematical methods or methods for performing a mental act. However, this does not prevent the granting of patents for inventions involving the use of such programs or methods, as long as a technical effect is achieved by its implementation. Such a “technical” effect may, for example, be found in the internal functioning of a computer itself.

The Irish Patents Office follows the strict criteria set out in the European Patent Convention (EPC) when considering patents for registration, including its guidance on the technical character of inventions. While this technical element has been the subject of case law in the UK, no such judicial guidance exists in Ireland, though of course there is considerable case law at the EPO level.

Similarly to copyright, Section 15 of the Patents Act states that legal persons only may apply for and therefore own a patent. However, there is no equivalent concept of computer-generated content and ownership. So to be successful, an applicant would have to prove that it was the inventor of the underlying algorithm, and that if it is based on a computer program or mathematical method, it had a technical capability which met the EPC criteria. If the subject of the patent application was found to be invented by the AI system itself and not by the underlying creator of the AI system, it should follow that it would not be patentable and would fall into the public domain.

For that reason, it seems to us that, similarly to copyright, the legal position on AI owning patents is unclear. Therefore, it would again seem prudent that AI contracts should include provisions in respect of ownership, assignment and licensing of AI-developed content.

AI and data protection

AI is closely linked to the use of Big Data and, of course, that can include personal data. Therefore, the use of AI will be subject to the Data Protection Act 2018 which incorporates the General Data Protection Regulation (Regulation (EU) 2016/679) (“GDPR”) in Ireland. As well as a controller’s (or indeed processor’s) general obligations to take appropriate technical and organisational measures to safeguard personal data under the GDPR (Article 24), there are two specific requirements under the GDPR which will need specific attention.

Firstly, Article 35 of the GDPR states that, where a type of processing uses new technologies, and, taking into account the nature, scope, context and purposes of the processing, it is likely to result in a high risk to the rights and freedoms of natural persons, the controller must, prior to the processing, carry out an assessment of the impact of the envisaged processing operations on the protection of personal data. In particular, instances of automated

processing on which decisions are based that produce legal effects must be the subject of such a data protection impact assessment.

Secondly, Article 25 of the GDPR obliges controllers to build privacy by design and default into any new systems. Recital 78 of the GDPR states that, in order to be able to demonstrate compliance with the Regulation, the controller should adopt internal policies and implement measures which meet, in particular, the principles of data protection by design and data protection by default.

One of the measures suggested for achieving this is the minimisation of personal data, a concept a controller must commit to in any event in accordance with Article 5. However, minimisation seems at odds with the concept of Big Data.

Other aspects of the GDPR which a controller may have to consider before using AI in respect of personal data include its obligations in respect of transparency (Article 5) and, where automated processing is undertaken, its obligation pursuant to Article 22 (and the European Data Protection Board's Guidance on that Article) to explain the logic behind the automated processing. This may be difficult where the AI system itself is making the rules pursuant to opaque processes which the controller may struggle to understand, much less explain!

AI and competition law

Competition law in Ireland is governed by the Competition Act 2002 and the Competition and Consumer Protection Act 2014. The two most important tenets of that legislation for the purposes of this chapter are the prohibition on anti-competitive practices set out in Section 4(1) of the Competition Act and the prohibition on the abuse of dominance set out in Section 5 of that Act.

AI is a relatively new world for competition authorities, and perhaps some of the perceived threats of AI acting independently and breaching competition laws by themselves are less facts than fiction. Nonetheless, it is possible to see situations where, for example, a company could become dominant through the compilation or acquisition of a large and unique set of Big Data. If it were to use its position to discriminate against competitors or customers, it might be found to be abusing that dominant position. There have been cases in other jurisdictions where artificial intelligence, in the form of automated re-pricing software, was programmed by competing online sellers to ensure that one competitor didn't undercut another. This was, not unsurprisingly, seen as being anti-competitive collusion.

But what about where the AI system itself has introduced the anti-competitive practice – what view would be taken by the Competition and Consumer Protection Commission in Ireland? So, for example, if the AI system used by all online sellers of a product in the market independently monitored and matched the prices of competitors.

It would seem that, from an EU competition perspective, the Commission takes the view that mechanisms must be put in place to ensure accountability for AI systems and their outcomes (Commission Press Release 8 April 2019: Artificial intelligence: Commission takes forward its work on ethics guidelines). Indeed, in an interview with CBS, in September 2018 EU Competition Commissioner Margrethe Vestager was asked who was responsible when an algorithm makes its own decision. She made it very clear that she would hold the company running the algorithm responsible.

Irish competition law is based on and subject to EU competition law, and it seems unlikely that a similar set of circumstances would be interpreted any differently.

AI and corporate governance and responsibility

Section 228 of the Companies Act 2014 lists the fiduciary duties of a director in Ireland.

These include obligations to act in good faith, and honestly and responsibly in the interests of the company. There is also a duty to exercise the care, skill and diligence that would reasonably be expected of someone in their position.

While recognising the benefits of AI for improving a company's performance, company directors, in order to fulfil their fiduciary duties, must also be aware of its dangers. For example, if an algorithm is based on a pre-existing bias, then an AI system is likely to compound it. If an AI system is hacked, algorithms could be changed to alter decision making to the detriment of the company. Company directors must also consider the ethical issues surrounding the adoption of AI solutions. Directors should not delegate tasks to AI without adequate monitoring, as they will continue to owe primary duties to the company, regardless of any delegation.

Certain financial institutions operating in Ireland are subject to governance by the Central Bank of Ireland (CBI). In particular, the CBI has issued guidelines such as the Cross Industry Guidance in respect of Information Technology and Cybersecurity Risks (September 2016) and the Outsourcing Discussion Paper – Findings and Issues for Discussion, published on 19 November 2018. Companies or financial institutions using cloud-based AI systems would be subject to the same outsourcing requirements. As a result, they would be obliged to include certain provisions in contracts with service providers including rights of audit for the CBI.

AI and contract law

The law of contract gives expression to human agency and choice by allowing legal entities to exchange benefits and obligations with one another. In the context of AI, this would involve two or more parties entering into a formal agreement to determine who would be legally responsible for the acts of the AI system in question. Typically, the vendor of the AI system would, in return for payment, undertake a series of obligations, and in the process provide representations and warranties. This has already been a feature of the marketing of AI products, with the CEO of Volvo announcing that the company would accept all liability for harm caused by its cars when they are operating autonomously. As market conditions shift and as consumers become more comfortable and even dependent on AI technology, it may well be that the balance of bargaining power will also shift and vendors will move towards limiting their liability (subject to the constraints of consumer protection laws), as opposed to offering sweeping warranties and indemnities.

Thus far, there has not been a profound tension between the law of contract and AI. Since the age of the internet, automated contractual systems have been commonplace – from consumer sales of airline tickets to high frequency trading of financial instruments. At present, these systems conclude contracts on behalf of recognised legal entities.

Blockchain technology (a system of automated records, known as distributed ledgers) now opens up the possibility of self-executing contracts which proceed on an “if/then” basis – contracts that can be executed without the need for ongoing human input. This raises the question as to where liability should rest in a situation where AI is brought to bear in such scenarios and concludes a contract without direct or obvious instructions from a recognised legal entity.

It has been argued by some that the legal entity responsible for the tool is also responsible for the results obtained by its operation (see earlier comments by Margrethe Vestager, for example). This proposition may be satisfactory in the context of the standard automated contractual systems already in operation in most online retail platforms. But it may not fully cater for the potential of future AI systems which may conceivably learn and develop independently of their original inception, and thereby act as an agent in their own right.

As a result, there have been calls for the creation of a separate legal personality for AI systems. This is a radical and not easily digestible proposition. While the issue of separate legal personality may be part of the future legal framework regulating AI systems, it is hard to see how it could be a workable concept at this early stage in the evolution of AI. Even if conceptually sustainable, the imposition of such a legal personality would seem to imply the assignment of assets to each AI system, a proposition that could act as a disincentive to those considering investing in developing new and potentially beneficial AI systems. The concept of separate legal personality could also have profound implications for criminal law, where the principle of *mens rea* (i.e. the knowledge component of a crime) is a key element. Contract law in Ireland is primarily a creation of the common law system and thus, in principle, is inherently sufficiently flexible to evolve to some extent to cope with the issues raised by AI through further judge-made law. However, this principle of common law flexibility has its limits, and it would seem highly likely that, for example, any move in the long term towards introducing a concept of separate legal personality would either be a function of the Oireachtas (Irish legislature) or may even fall within the competency of the EU as an aspect of market harmonisation.

A further obvious limit of reliance on contract law to regulate liability for AI is that, under Irish law, a contract only places obligations on those who are a party to the contract. Contract law is therefore of limited use in regulating the activities of AI systems where those systems come into contact with third parties, as they often do (for example, the self-driving drone that delivers mail to an individual will likely cross the path of various other parties on the way).

AI and negligence

In addition to the law of contract, the law of negligence also bears consideration in an Irish context. Indeed, when traditional technologies have been defective or caused injury, individuals have typically sought compensation in negligence. This requires proof of the existence of a duty of care, a breach of that duty, and that the breach caused the injury complained of. This set of rules has served the common law world well. However, its application to AI is not entirely clear.

It is well established in law that vendors and manufacturers of technology owe to their customers a duty of care. It is also easy to imagine how that duty could be breached (for example, providing technology that functions incorrectly due to a manufacturing fault the vendor/manufacture should have been aware of). However, the question as to whether an AI system could be deemed to have caused an injury is much less clear.

If the AI system *recommends* an action (for example, a parking aid system in a car warning a driver of obstacles around the car) then the technology user will have to act such that the chain of causation may well be broken, and the customer may then be solely liable for any injury caused by their use of the AI system. Whether there would be a basis for contribution against a vendor and/or manufacturer of the relevant AI system will be a thorny issue in this scenario.

If the AI system *takes* an action (for example, a fully automated car that automatically cuts out when it detects a hazard), the chain of causation ought not to be broken by any action on the part of the customer. However, given the multitude of scenarios in which a given AI system might operate, issues around reasonable foreseeability on the part of the technology vendor and/or manufacturer are likely to arise. For example, the automated car or other AI-enabled technology manufacturer may argue that it could not possibly foresee every eventuality in which the car might find itself. This may be particularly so in cases where AI

systems have advanced machine learning capacity. The extent to which a machine which is designed to learn, but whose designers may not fully appreciate where the learning journey takes the machine, raises profoundly difficult issues concerning foreseeability.

That being said, the law of negligence is inherently flexible, with the key concepts of proximity, reasonableness and foreseeability all being subject to the prevailing standards of the time, place and relevant protagonists, such that, as an area of the law, it may be unusually well-suited to adaptation.

AI and product liability

It has been argued that foreseeability issues around autonomous AI systems could be resolved through use of the product liability framework in place at both EU and national level.

Under the Irish Liability for Defective Products Act 1991 (giving effect to Directive No. 85/374/EEC), a product is defective when it does not provide the safety which a person is entitled to expect, taking into account all the circumstances, including:

- the presentation of the product;
- the use to which it might reasonably be put; and
- the time when the product was put into circulation.

Broadly speaking, an injured party can pursue any supplier at any level of the supply chain in respect of a faulty product. This makes the process of seeking compensation much more straightforward for claimants and would have the effect of encouraging consumer confidence in this emerging technology. Indeed, the product liability framework was created for this purpose at a time when consumers had lost confidence in products due to increasingly complex supply chains and highly publicised scandals, such as that surrounding the “morning sickness” drug, Thalidomide. Introducing a regime dealing with liability on an end-to-end basis in respect of a supply chain for AI products could have the benefit of encouraging safety and caution in AI development, in addition to providing more certainty to suppliers who could then price the risk of damages into the cost of the product, as well as allowing them to make more accurate actuarial calculations.

However, the law on product liability is not entirely fit for the purpose of regulating AI technology. First, Irish and EU law defines products as “all movables”. It is clear that not all AI systems would come within this definition (for example, cloud-based AI systems). The second issue with applying the product liability framework to AI is that the product liability framework assumes the product does not continue to change. AI does not follow this paradigm, so it seems that product liability framework would need to be revised to cater for the particular characteristics of AI.

The various different forms of AI may have to be accurately and precisely defined. It should follow that the EU definition of “product” will then have to be amended accordingly. It is possible that product liability law will not work for all forms of AI, and indeed it could undermine the structure of product liability law itself if its definitions were stretched too far in the attempt to regulate AI.

In addition, the law would likely have to take account of the fact that AI technology in a sense changes over time after the point at which it is released into the market. The extent to which the law allows for these changes and shifts liability accordingly will be a policy decision which ultimately will depend on where society and lawmakers believe the risk should rest in the production and use of new AI technologies.

Notwithstanding these issues, the use of a regulatory framework styled on the current EU product liability framework with bespoke provisions related to AI may be a good first step in regulating AI technologies.

AI – employment law and administrative law

The potential for discrimination and bias is of particular concern in the employment law context given the broad prohibition on discrimination set out in Ireland in the Employment Equality Acts 1998–2015. Notwithstanding this concern, it would appear that employers are increasingly turning to AI in the recruitment of new employees.

In the recruitment context, an employer might use an AI system to accept and reject unsuitable candidates automatically. If an unsuccessful candidate can show that the decision to reject their application was based on any of the nine protected grounds (e.g. race, gender), then that employer may be held liable for unlawful discrimination in access to employment.

In Irish law, there is no defence to a claim of direct discrimination where a practice is deemed to be directly discriminatory. So, an AI filter which screens out candidates on the basis of age or nationality is directly discriminatory and unlawful.

Sometimes discrimination is an unintended consequence of an action. In those cases, there may be a defence of objective justification where an employer has indirectly discriminated against a candidate. The defence of objective justification requires an employer to show that the act or process which triggered the (albeit unintended) discriminatory consequences was a reasonable, proportionate and necessary measure.

In the context of AI, however, this may be a difficult defence to argue unless the employer can demonstrate that the programming instructions to the AI device were strictly confined to applying filters which are demonstrably non-discriminatory. For example, a lawful filter would include specific professional qualifications, specific experience which relates to the technical competencies of the role or the holding of a specific role.

As noted, the employer would need to take care that no discriminatory filters are applied such as date of birth, gender or disability. The employer should also take care to ensure that it does not inadvertently use proxies for discrimination in the application of filters for recruitment. For example, the AI device may be programmed to screen for candidates who have a six-month break between assignments. That could have the unintended effect of screening out parents who have taken time out to care for children or it could screen out a candidate who had time out from their career due to illness. Another example of a proxy for discrimination could be a street address or post code area, where that address or post code is associated with a particular ethnic group.

In essence, if AI is being deployed to filter candidates, then the employer needs to carefully screen and consider the filters to ensure that the unintended filtering of candidates does not breach Irish employment law. This should also be regularly reviewed in light of legislative and case law developments.

In a dispute, it is very possible that a plaintiff's lawyers could seek detailed information on how the AI device was programmed. It could, for example, have the effect of requiring the developer of the AI system to allow the employer access to its coding – something it is unlikely to do, given the commercial sensitivities in allowing such access. Moreover, even if a developer was willing to part with such commercially sensitive information, the employer may not be able to make sense of it, given the challenges associated with the explicability of complex AI systems. This problem is often termed “algorithmic opacity” or the “black box”

issue. It also highlights the limits of what a developer could safely do without the close input of the employer in the digitalisation of the recruitment process.

An alternative option is for the employer to insist that the AI developer warrants that the operation and decision-making processes of the AI system comply with Irish employment law. In practice, this could be challenging. Employment laws change. Case law changes the interpretation of existing employment laws. As a result, developers may be highly reluctant to give such warranties, in circumstances where the AI system is operating on a data set provided to it by the employer, which might itself contain biases.

A possible interim solution then is for employers to adjust their use of AI systems to take account of the risks involved. This would require employers to retain their autonomy over the recruitment and other HR processes by stress-testing the AI process internally and appointing an employee to audit various stages of the process. Such human control over the AI system may be sufficient to allow the employer to take advantage of the defence of reasonableness available under the Employment Equality Acts.

The use of AI also raises interesting questions in the context of administrative law. It is a well-established principle of administrative law that where the law requires that a decision be made by a particular person (for example, a Minister), that decision should not then be delegated to others as it would undermine public accountability. This raises the question as to whether the use of AI systems in carrying out administrative functions could amount to a delegation of the decision-making process. Nominated decision-makers are allowed to take *advice* from others who have not been delegated the authority to make decisions, provided this does not amount to the decision-maker having the decision dictated to them. The advice/dictation distinction is a particularly difficult one to make in the context of AI, thanks to the existence of the so-called *automation bias*, a psychological phenomenon rendering humans much more likely to trust decisions made by machines than by humans.

Broadly speaking, in an administrative law context, the more serious and/or complex the decision and its effects, the greater the need to give reasons for it. This is likely to be problematic in the context of decisions being made with the advice of AI systems, given the decision-making process of such systems is often not readily explicable. There is a potential danger in public bodies attempting to circumvent the issue by relying on advice of the AI system and then providing retrospective justifications for the decisions they have reached. The courts should be aware of this risk and should exercise the appropriate level of scrutiny where it appears public bodies are attempting to rely on such *post facto* justifications. Given the difficulties of explanation for the reasons as to why an AI system comes to any given conclusion, it is conceivable that its use in public decision-making will, for the time being, be limited to more mundane decisions that will be unlikely to require reasons.

Regulating AI in the future

The regulation of AI will likely come in three stages, and we don't see Ireland's approach as being fundamentally much different to other jurisdictions' approaches, especially as much of any new regulation is likely to be led by decisions at an EU level.

The first is to take the step of defining AI. As is evident from the above, AI can take many different forms and as such various different regulatory responses will be required. The definitions of AI will have to be precise yet sufficiently flexible to allow for new developments in the technology. It is suggested here that a distinction will need to be drawn between AI that is advisory in nature (for example, a parking aid in a modern car) and AI

that is autonomous in nature (for example, the car that drives itself). This distinction is significant as each form of AI will require significantly different regulatory responses.

The second stage of regulating AI will be to regulate AI that is advisory in nature. Without ruling out other fields of law, existing laws of contract, negligence, product liability, criminal law and employment law could together, with some adjustments, regulate this form of AI technology. The amendments required to these existing bodies of law will require careful consideration and care should be taken to ensure the parameters of existing law are not stretched so far as to undermine their primary purpose of regulating the behaviour of natural and legal persons.

The third and final stage of regulating AI will be to regulate AI systems that are autonomous in nature. This is a significantly more challenging task and one that may eventually require the creation of a separate legal personality for AI systems. However, in these infant stages of the evolution of AI technology, it appears premature to impose legal personality on such technology. Such an imposition of legal personality would only work if significant assets were placed in the possession of AI systems. This would have a prohibitive effect on investment in AI technology and therefore should not be considered until the technology is better established and understood.

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Endnotes

1. Microsoft Artificial Intelligence in Europe Report 2018.
2. Microsoft Artificial Intelligence in Europe Report 2018.
3. Microsoft Artificial Intelligence in Europe Report 2018.

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- **Fintech**
- **Fund Finance**
- **Initial Public Offerings**
- **International Arbitration**
- **Litigation & Dispute Resolution**
- **Merger Control**
- **Mergers & Acquisitions**
- **Pricing & Reimbursement**

Strategic partner:

