Libra appoints heavyweight lawyers to top roles to help it win regulatory approval

By John Malpas

Two top banking lawyers, both with high-level experience as federal US government regulators, have joined the controversial project to create the Facebook-backed Libra blockchain digital currency.

HSBC's chief legal officer, Stuart Levey, was appointed the Libra Association's first chief executive on 6 May, shortly before Robert Werner, was confirmed as general counsel on 19 May.

The appointments follow April's publication of version two or the Libra Association's white paper in which the Facebook-created grouping of private companies backing the venture responded to the storm of protest from banking regulators and politicians that met the launch of the original white paper in June 2019.

Both men's credentials will help reassure regulators that the major concessions laid out in the white paper will be underpinned by a heavyweight legal and compliance team.

While Levey has spent the past eight years as HSBC's global legal chief, he previously served as First Under Secretary of the Treasury for Terrorism and Financial Intelligence during the presidencies of George Bush and Barack Obama.

Werner's previous private sector roles include enterprise executive for policy, privacy and regulatory relations at Goldman Sachs, and head of financial crime compliance at Merrill Lynch.

Stuart Levey

Robert Werner

Before that he held several senior roles at United States Department of the Treasury, including as director of the financial crimes enforcement network (FinCEN) and director of the office of foreign assets control, (OFAC).

On his appointment, Levey said he looked forward to "working closely with governments, regulators, and all of our stakeholders" to realise Libra's vision "to make it easier for individuals and businesses to send and receive money, and to empower more than a billion people who have been left on the sidelines of the financial system, all with robust controls to detect and deter illicit financial activity". Werner said: "I have dedicated my career to combating financial crime and helping complex organizations achieve regulatory compliance, both in government and in the private sector. I look forward to meaningfully contributing to such an impactful project."

While the new white paper holds on to Libra's lofty ambition to enable 'a simple global payment system and financial infrastructure that empowers billions of people'

it makes key concessions to those who feared its model of a floating, 'permissionless' digital currency would undermine the global banking system and be a haven for criminals seeking to launder money.

Crucially, in place of its floating digital currency, it proposes to launch single currency stablecoins fully backed by reserves in those currencies, which will initially be US dollars, Euros, British pounds and Singapore dollars. There will be a multi-currency Libra Coin, but it will no longer be a separate digital asset and will instead operate as 'a digital composite of some of the single-currency stablecoins available on the Libra network'.

There will also be a beefed-up compliance system with tight controls on who can operate as 'designated dealers' and 'virtual asset service providers'.

A third category of users – defined by Libra as 'Unhosted Wallets' – is envisaged, but will initially be excluded from participating while Libra seeks to develop its compliance framework based on feedback it has received from regulators.

'Unhosted Wallets enable financial inclusion, broad competition, and responsible innovation and thus facilitate the creation of services for the unbanked and underbanked,' the white paper states. 'Since their activities may pose a greater risk, they will be subject to balance and transaction limits.'

The watering down of Libra's ambitions has led to accusations that it is no longer the game-changer it set out be; albeit a highly valuable payment tool for Facebook.

"If you are Facebook and you want to grow, it would be really useful to have a functional, stable, cross-border payments system just to be used on the platform itself," said Stephen Palley, a partner at the Washington law firm Anderson Kill told The Financial Times. "I wouldn't be surprised if this was the plan all along."

However, HFW commodities trade partner Philip Prowse was as impressed with version two of the white paper as he was unimpressed with the first iteration.

"The first white paper was naïve and amateurish – version two is the opposite of that: it is a highly polished proposal that is using blockchain technology in the right way and that could benefit a lot of people," he said.

He predicted the new version of the currency, which was submitted to the Swiss Financial Market Supervisory Authority in April, would win approval, "possibly this year".

Contents

Discrimination laws must encompass facial recognition models

Emer Cassidy

Emer Cassidy argues that that not only facial recognition's use but also its creation and accuracy must be regulated

In addition to privacy issues associated with the large-scale use of facial recognition, there are serious concerns about the maturity of this technology and its ability to accurately identify people – most especially people of colour.

Legislators need to look at the creation and accuracy of models being used in facial recognition software and not simply at its use.

We know that AI, and in particular machine learning models, are only as good as the data you train them on. For facial recognition technology you train it on pictures of humans and it can then identify specific people by mapping their facial characteristics.

Historically, when creating a model, the data used to train, validate and test the model needs to be 'perfect' data - clear and unambiguous. For facial recognition you might use full frontal images which show someone's face full on in good light.

The issue for facial recognition technology in real world use is that you are not getting such clear, detailed images. Whether body cameras on police officers or surveillance cameras on lamp posts, you generally will not get the same clarity of image – the lighting may be bad, it could be a moving image, or a partial shot of a face.

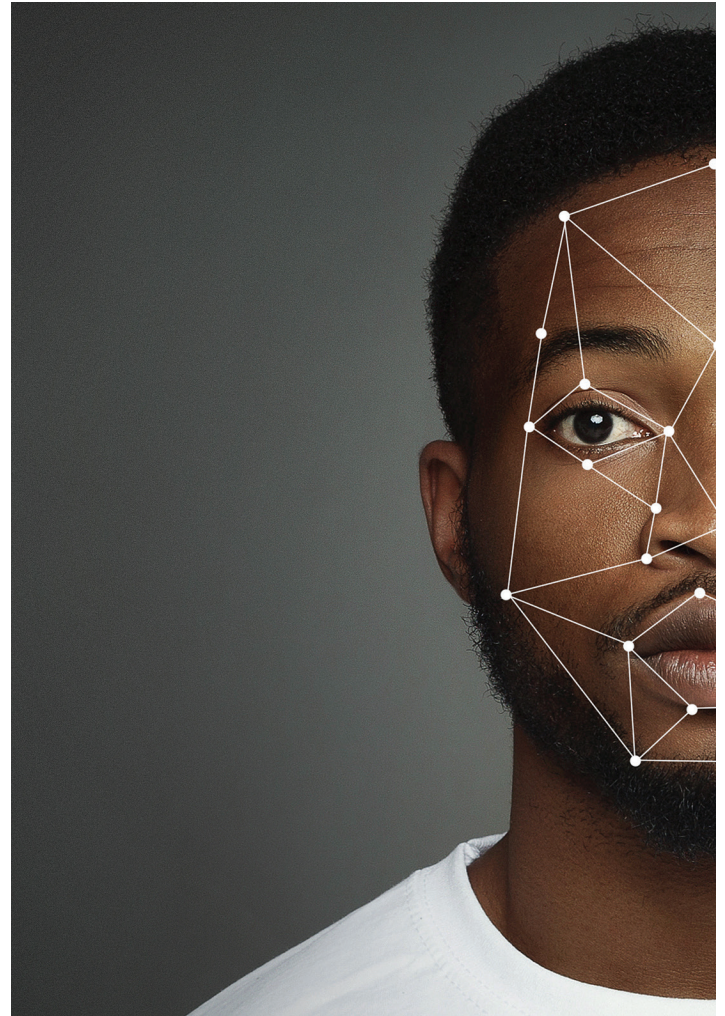All of this contributes to make the technology less accurate, and more prone to mistakes in public use. This needs to be acknowledged and the risks mitigated before cities and governments adopt the use of facial recognition in public life.

This issue becomes more pronounced for people of colour, a United States study by the National Institute of Standards and Technology found people of colour are more likely to be misidentified by facial recognition software. This is not an issue with the artificial intelligence, it's an issue with the data used to train the model.

The same US study found that facial recognition technology created by Asian companies was less likely to misidentify Asian faces. This indicates that using more extensive training sets of data can mitigate against this bias.

There are Chinese companies which say they have 95% accuracy when identifying people through facial recognition. This shows that it's not that it's easier to identify certain ethnicities, it's that without a strong data set incorporating people of colour, misidentification of these people is more likely.

Regulation should not just be focused on either banning or allowing this technology, but should identify what the technology is intended to be used for and a suitable accuracy standard for that use. Not all uses need to be of the same accuracy - for example, unlocking a phone might require a lower accuracy standard than a law enforcement use.

The security concerns of unlocking a phone incorrectly do not carry the same weight as incorrectly identifying the perpetrator of a crime. A striking example of this was borne out in California during the process of passing the Body Camera Accountability Act. This bill placed a moratorium on the use of facial recognition in body cameras of police officers. While the bill was moving through the California legislature the American Civil Liberties Union fed images of the same California legislature, into facial recognition software. When these images were compared with mugshots, 26 lawmakers' images came up and were incorrectly identified as a match. This shows the importance of ensuring the accuracy of this technology to prevent serious legal issues or miscarriages of justice.

Requiring models to be trained in a way which uses data across many ethnic and racial backgrounds, could work to remove some of the bias which these models have been shown to have. In the same way we do not allow discrimination on the basis of gender or race in employment opportunities we should not allow discrimination in the creation of facial recognition models. Diversity should be a key tenant to the creation of this technology. Regulation should require that data used to train the models should consist of equal volumes of different backgrounds. Creating and training a model with predominantly Caucasian data should not be considered appropriate for large scale use in diverse societies.

Facial recognition is undoubtedly a useful technology advance. However, before we embrace it across society in public use, we need to regulate not only its use but also its creation and accuracy.

Emer Cassidy is policy manager, business products at Facebook

Cruise turns to Jeff Bleich to help get its market-leading AVs over the finishing line

Roman Edwards

Cruise is a front runner in the race to deploy the first autonomous vehicles (AVs) in the US.

In January, it won widespread praise for its technical and engineering prowess when it unveiled the Cruise Origin: its electric autonomous ride-sharing shuttle.

One such admirer was AV consultant Marc Hoag. But he had an important caveat.

The AV, which is designed to be used as a taxi, is not licensed to operate on the roads. For the time being at least, its use will be confined to private complexes, such as Cruise's parent company General Motors' facilities in Michigan.

"My biggest critique is: what on earth is the deployment plan?" he said in an episode of his Autonomous Cars podcast. "You've got all these brilliant engineers working on something awesome but somehow nobody's on the team to actually realise it and bring it to market."

Step forward Jeff Bleich, who was appointed as Cruise's chief legal officer in April. Bleich, who started in his new role on 4 May, is an undoubted heavyweight in the field of law and government relations.

His career includes roles as White House special counsel to President Obama, Australian ambassador, president of the California State Bar and head of Dentons' global commercial diplomacy group.

But he has also accumulated considerable hands-on legal experience during two lengthy stints at Los Angeles firm Munger Tolles & Olson, where he specialised in disruptive technologies, cybersecurity and international disputes.

His experience representing tech giants including Adobe, Apple, Intel and HP will stand him in good stead to safeguard Cruise against the potholes that await it in the final laps towards successful deployment of its much-trumpeted AV. Complex litigation, cybersecurity, IP,

Jeff Bleich

international disputes and disruptive technologies are all within his purview.

Lawyers specialising in AV argue that the legal system's method of using old precedents for new problems is struggling to deal with a new technology that is original, deeply complex and uncertain in its form: it is not yet even known at what iteration, from conditional assistance to full automation, the first people carrying AVs will be licensed.

Jordan Jarret, partner and chair of Quinn Emanuel's AV practice, says: "One of the biggest obstacles in the large-scale commercialisation of AVs is accounting for the transition: a road on which there are both regular vehicles and AVs will present more problems than if there were just one or the other."

In addition to general qualms about safety, sustainability and sufficient telecommunication infrastructure, legal uncertainties include: standardisation, liability (specifically contributory negligence and indemnity obligations), regulation, intellectual property rights and cybersecurity.

"Recent reports of hackers seizing control of autonomous vehicles have highlighted the importance of cybersecurity in protecting both passengers and bystanders from potential dangers," says Fieldfisher technology, outsourcing and privacy partner James

Buckingham.

All the while, Bleich, who has taken charge of Cruise's legal and compliance teams, will need to ensure its IP portfolio is suitably protected.

Mauricio Uribe, an IP partner at Knobbe Martens, argues this should be a priority.

"IP is where the core value lies in the development of AVs," he says. "Once the relevant authorities approve a standardised AV model, it will be companies' individual enhancements above the standardised technology that generate revenue, and any firm without IP rights, licenses and patents will not be able to sit at that table."

Bleich arrives at Cruise at a difficult time for AV manufacturers. Covid-19 lockdown has removed AVs undergoing testing from the roads and economies are being plunged into recession.

And just as the pandemic was arriving on US shores, the National Transportation Safety Board (NTSB) published its final reports into the deaths of two drivers using Tesla's advanced driver assistance system (ADSS) Tesla Autopilot.

In the high-profile Mountain View crash, which occurred in March 2018, a game application was active on Apple employee Wei Huang's iPhone. The NTSB said the probable causes of the accident were systems limitations, the 'driver's lack of response due

to distraction likely from a cell phone game application and overreliance on Autopilot partial driving automation system'.

"As I've said before, you can't buy a self-driving car today; we're not there yet," said NTSB chairman Robert Sumwalt. "This car had level two automation... But the driver in this crash, like too many others before him, was using level two automation as if it were full automation."

Sumwalt criticised Tesla for failing to respond to two safety recommendations made in 2017. But he also had harsh words to say about the regulators.

"Equally disturbing is that government regulators have provided scant oversight, ignoring this board's recommendations for system safeguards," he said.

Bleich's diplomatic skills will no doubt come to the fore as he and his team seek to convince The National Highway Traffic Safety Administration (NHTSA) to approve Cruise's request for permission to operate to 5,000 driverless vehicles as part of a taxi fleet, which was lodged as far back as January 2018.

In February, a major regulatory milestone was reached when the NHTSA granted the first autonomous vehicle licence to Mountain View robotics company Nuro to put up to 5,000 of its autonomous electric delivery vehicles on the road over a two-year period.

The low speed vehicles will not carry people and are limited to 25mph. They will also be monitored remotely at all times by experienced human operators.

General Motors' submission was made nine months before Nuro's, but because it wants to move people a different timeline is to be expected.

When Nuro's application was approved a Cruise spokesman told The Detroit News: "NHTSA has been very forward-thinking in their approach, and we continue to have productive conversations."

The finishing line may be nearer than many people think.

M&A

By Roman Edwards

Hogan Lovells advises Intel on $900m acquisition of Mobileye

Hogan Lovells is advising Intel on its acquisition of Moovit, an Israeli mobility-as-a-service (Maas) startup with 800 million users in 3,100 cities across 102 countries. Moovit analyses urban traffic paradigms with a specific focus on public transport recommendations. Its lead counsel on the deal was Israeli law firm H F & Co, with Goodwin Procter acting as US counsel. The deal values Moovit at $900m, although the growth of Intel's existing stake in the company diminishes that sum to a transactional value of $840m. Intel plans to use Moovit's technology to strengthen its Mobileye project; an autonomous car company Intel acquired for $15.3bn in 2017. The addition of Moovit brings Intel's Mobileye closer to achieving its plan to become a complete mobility provider, including robotaxi services — a market which is forecast to be worth an estimated $160bn by 2030. Intel CEO Bob Swan said: "Mobileye's ADAS [Advanced Driver Assistance Systems] technology is already improving the safety of millions of cars on the road, and Moovit accelerates their ability to truly revolutionize transportation – reducing congestion and saving lives – as a full-stack mobility provider." The Hogan Lovells team was led by Silicon Valley corporate partners Jane Ross and Rick Climan with support from senior associates Dylan Hanson and Stephen Grodski, and associates Samantha Seiden and Ariel Keller. The H-F & Co team consisted of founding partners Yuval Oren and Nitzan Hirsch-Falk, with Silicon Valley-based partner Mike Russel leading the Goodwin Procter team.

A Mobileye autonomous vehicle being tested in Jerusalem

Jones Day scoops role $7bn Nvidia deal

The California-based technology company Nvidia has acquired Mellanox Technologies, an Israeli-American multinational supplier of computer networking products, in a $7bn deal negotiated by Jones Day and Latham & Watkins respectively. Nvidia designs graphics processing units (GPUs) for the gaming and professional markets, in addition to system-on-a-chip units (SoCs) for mobile computing and automotive industries. Nvidia GPUs are commonly used in deep learning, accelerated analytics and AI. According to TechRepublic, the GPUs "work well for deep learning tasks because they are designed for parallel computing and do well to handle the vector and matrix operations that are prevalent in deep learning". Nvidia saw off competition to acquire Mellanox from Intel, Xilinx and Microsoft. It acquired all the issued and outstanding common shares of Mellanox for $125 per share in cash. Latham's team representing Mellanox was led by Bay Area partners Alan Mendelson, Josh Dubofsky and Mark Roeder, with the legal work involving US, EU, and China antitrust approvals. Jones Day's team was led by head of antitrust and competition law Craig Waldman and partner Jonn Beeson.

Kirkland steps in as MRI Software acquires Castleton for £83m

Kirkland & Ellis has advised Cleveland-based MRI Software on its recommended cash acquisition of UK outfit Castleton Technology, advised by DAC Beachcroft. The acquisition values the entire issued and to be issued share capital of Castleton at approximately £82.8m. Castleton is a provider of software and IT smart solutions for the social housing, commercial sector and wider public. Its platform of software and cloud capabilities provides a 'one stop shop' service which effectively replaces administrators in housing sectors. The company is set to send out 4,500 Amazon Alexas to existing customers in order to deploy its Castleton AI manager. The Kirkland team was led by transactional partners David Holdsworth and Dipak Bhundia, supported by associates Jack Donelan and Sam Hare (all London).

Finance

DLA Piper helps Kleos Space secure Dubai loan

Kleos Space has been advised by DLA Piper on a €3.4m loan agreement with Winance, an investment holding company based in Dubai. Luxembourg-based Kleos Space is a data-as-a-service company; using radio frequency transmissions of low earth orbit antennae to carry out geo-location. The data yielded can be used to generate pattern-of-life data sets for reconnaissance, asset-tracking and surveillance purposes. The loan agreement is for 12 months, or later, if agreed by both parties. Kleos Space chief executive Andy Bowyer said: "This funding provides Kleos with working capital to progress the development of our second cluster of satellites while we await revenues from our Scouting Mission satellites." The DLA Piper team was led by Luxembourg managing partner Catherine Pogorzelski and finance partner Laurent Massinon. "This deal highlights DLA Piper's ability to leverage our global presence to seamlessly execute complex cross border transactions…we are proud of having supported the space industry, which is key for Luxembourg, through this transaction," said Massinon. Marc Serres, CEO of the Luxembourg Space Agency, added: "Luxembourg and the UAE share the same commitment to support the economic development of the commercial space industry." DLA Piper's team also included counsel Constantin Iscru and associate Cindy Van Rossum (both finance and projects), and counsel Ambroise Foerster and senior associate Gersende Masfayon (both corporate).

Kleos Space is developing a second set of satellites

Osborne Clarke and CMS act on Blue Prism cashbox placing

Osborne Clarke has advised Investec Bank on its £100m cashbox placing for Blue Prism, which was represented by

CMS. Blue Prism, which is credited with inventing the term robotic process automation (RPA), is headquartered in the UK and floated on the London Stock Exchange's AIM market in March 2016 with an initial valuation of £48.5m. Osborne Clarke said the deal provide it "with additional balance sheet strength in case of prolonged disruption during the period of uncertainty relating to the COVID-19 pandemic, support its progress to cash flow break-even and enable it to capitalise on potential near term and future market opportunities". Investec acted as the sole bookrunner, nominated advisor and financial adviser, with Osborne Clarke partner Jonathan King leading the team, with support from senior associate Ed Nisbet and associate Oliver Woods. The CMS team was led by corporate and client relationship partner Osborne Clarke and CMS act on Blue Prism cashbox placing Simon Morgan and included consultant and US counsel David Rivera, senior associate Nicole Gyring-Nielsen and associate Jennifer Tambe.

White & Case and Hogan Lovells advise on inaugural Omilia funding

Cypriot startup Omilia has completed its inaugural funding round with advice from White & Case, raising $20m from Grafton Capital, the UK-based growth equity firm that specializes in partnering with founder-owned, European software companies. Hogan Lovells advised Grafton Capital. Omilia, which was founded in 2002, has developed conversational AI for customer support and its customers include Vodafone, Piraeus Bank and Medicover. Hogan Lovells partner Richard Diffenthal said: "The capital will expand the firm's global technology footprint and, in particular, its platforms in North America and Western Europe. We believe AI's increasing role in customer care solutions like this has never been more important." White & Case partner Daniel Turgel added: "Deploying authentic customer care solutions through AI has never been more relevant." The technology integrates with existing customer support systems and is compatible with 21 languages. White & Case partners Turgel (London) and Tali Sealman (Silicon Valley) led the team, which also included partner Assimakis Komninos (Brussels) and associates Helen Pantelides and Shelley Barnett (both London). The Hogan Lovells team was led by Diffenthal, a corporate partner, with support from senior associate Simon Grimshaw and associate Matthew Grice, working alongside partner Karen Hughes and senior associate Tom Eyre Brook (both tax), with further assistance provided by Harneys on Cypriot law and Karatzas & Partners on Greek law.

Simpson Thacher and Davis Polk help Texas Instruments raise $750m

Simpson Thatcher represented the underwriters on Texas Instruments' (TI's) offering of $750m in investment grade notes. TI, which is best known for its ARM Sitara processors, was advised by Davis Polk & Wardell. TI intends to use the net proceeds from the sale of the notes for general corporate purposes, according to Simpson Thatcher. Citigroup global markets, Mizuho securities, Morgan Stanley, Barclays Capital, BofA Securities, JP Morgan securities and MUFG securities Americas all served as joint book-running managers for the offering, which closed on May 4. The Simpson Thacher team included: partner Joseph Kaufman

and associate Ashley Yoon (capital markets); senior counsel Jonathan Cantor and associate Tyler Robbins (tax); associate Noreen Lavan (environmental); and senior counsel Jeanne Annarumma and counsel Eric Wolf (executive compensation and employee benefits). The Davis Polk corporate team included partner Emily Roberts and associates Benson Richards and Joseph G. Marano. Partner Lucy Farr and counsel Leslie Altus provided tax advice.

Raft of firms advise as N26 secures additional $100m

German challenger bank N26 was advised by Osborne Clarke as it successfully raised more than $100m in an extension of its series D funding. All major N26 investors were involved in the financing round, including Peter Thiels Valar Ventures, Insight Venture Partners and Singapore's sovereign wealth fund GIC. The investors were represented by Gunderson Dettmer, Willkie Farr & Gallagher and Freshfields Bruckhaus Deringer respectively. To date N26 has raised close to $800m, making it one of the highest-valued FinTech companies at $3.5bn. N26 general manager in Germany Georg Hauer said: "The financing was agreed before the coronavirus crisis began. The capital is to be used for the development of new products and growth in [our] core markets of Europe and the USA. It is also planned to enter the Brazilian market, and [we are] currently applying for the corresponding licence there." James Fitzgerald from New York-based venture capital fund Valar Ventures added: "This funding extension will help an already well-funded and successful business take the lead at a time when people are embracing digital banking more than ever." Founded in 2013, N26 has more than 5m customers in 25 markets. Osborne Clarke's team was led by German-based partner Nicolas Gabrysch and consisted of counsel Till-Manuel Saur, and associates Philipp Niedermeyer and Nicole Preuss.

> To date N26 has raised close to $800m, making it one of the highest-valued FinTech companies at $3.5bn

Insolvency

Sidley Austin steps up as Wave Computing files for Chapter 11

Sidley Austin is representing Wave Computing in its filing for bankruptcy under Chapter 11 of the bankruptcy code of US. The Silicon Valley-based micro-processing chip company holds more than 400 granted and pending patents and has been focused on producing AI technology with deep learning capacities. It is currently working exclusively on licensing its software as it enters insolvency. In a statement, Sidley said the filing had been prompted by "difficulties in the development of the company's newest dataflow processing unit and corresponding systems, together with threatened shareholder litigation and high liabilities incurred during prior commercialisation efforts". It added: "The company has approximately US$90m in outstanding liabilities and seeks to reorganise around its most successful technologies. The company intends to operate in the ordinary course of business during the chapter 11 cases and has filed a number of customary 'first day' motions to enable the company's operations to continue as usual." Sidley Austin's team consists of: partner Sam Newman and associate Julia Philips Roth (Los Angeles); partner Banks Bruce, counsel Charles Persons and Dusan Clark, and associates Jeri Leigh Miller, Keshav Dimri and Juliana Hoffman (Dallas); and partner Vijay Sekhon and associate Cat Zhang (Century City).

Can AI win the war against coronavirus?

While military needs have historically driven advances in AI and robotics, the fight against Covid-19 holds out the enticing prospect of an acceleration in their use to improve medicine. Dr David Cowan reports

It started on 30 December 2019.

Artificial intelligence systems identified the first clues of the coronavirus outbreak by scanning news images and social media posts from the market in Wuhan, China, where the outbreak is believed to have started.

It was a matter of days before the World Health Organization (WHO) released its risk assessment, and then it took another month for WHO to declare a global public health emergency for the novel coronavirus.

The AI sources which broke the news included BlueDot, which uses an AI-based solution to monitor outbreaks of infectious diseases around the world. The outbreak was also identified early by AI-based tools HealthMap at Boston Children's Hospital and Metabiota in San Francisco.

Although AI has played a useful role in our response to the pandemic, the case can be overstated.

At the same time that AI systems were flagging the pattern, it had also been picked up locally on social media with doctors and healthcare workers sharing their concerns and experiences.

And, of course, the devastating impact of Covid-19 illustrates how ill-equipped governments and health authorities were to respond to it, especially outside Asia.

Jacob Turner, a lawyer and author of Robot Rules: Regulating Artificial Intelligence, is nevertheless optimistic about the positive contribution AI can, and is making.

"AI is playing multiple roles in respect of Covid-19: medically, from accelerating the process of vaccine discovery, to analysing CT scans of patients' lungs," he says.

"AI systems are also now being put to work in modelling the spread of the virus, though this use case is a good example of the fact that many models are only as good as the data provided."

There has certainly been a flood of new research interest in this field, including the launch of several competitions to harness AI in the fight against coronavirus.

These include Kaggle's Covid-19 Open Research Dataset Challenge, which is supported by bodies including the National Institute of Health and the White House and whose call to action to the world's AI experts is to 'develop text and data mining tools that can help the medical community develop answers to high priority scientific questions'.

The Decentralized Artificial Intelligence Alliance is putting together Covidathon, an AI hackathon to fight the pandemic coordinated by SingularityNET and Ocean Protocol; and MIT Solve a marketplace for social impact innovation – has established the Global Health Security and

> **'People will become increasingly comfortable with technology of all kinds (AI included) replacing or supplementing human efforts.'**
>
> *Jacob Turner*

Pandemics Challenge.

On 28 April, the newly formed C3.ai Digital Transformation Institute – a joint project between C3.ai, Microsoft and an array of top US universities – announced the first three recipients of grants as part of its inaugural programme: Using AI to Mitigate Covid-19 and Future Pandemics.

The teams sharing $1m in grants are: developing a new model to predict the spread of Covid-19; building a system to track property evictions to inform US public policy on housing inequality; and developing computational techniques to interpret medical images to help with the surveillance, detection and triaging of Covid-19.

"These first three research projects represent the breadth of solutions for Covid-19 mitigation that artificial intelligence can bring to bear on fields as disparate as medicine, urban planning, and public policy," said C3.ai's chief executive Thomas Siebel.

Condoleezza Rice, former US Secretary of State, and Hoover Institution fellow and director designee, is an enthusiastic advocate of the institute's potential.

"We are collecting a massive amount of data about MERS, SARS, and now Covid-19," she said

"We have a unique opportunity before us to apply the new sciences of AI and digital transformation to learn from these data how we can better manage these phenomena and avert the worst outcomes for humanity."

There has been much reflection about how society may change as a result of Covid-19, including attitudes towards the use of technology.

Turner believes both the public and private sectors have been forced to become more reliant on it.

"One of the barriers to AI adoption in some sectors is a natural desire for human decision-making," he observes. "Although there will eventually be a reversion to face-to-face contact, this process will be slow. I expect in the meantime people will become increasingly comfortable with technology of all kinds (AI included) replacing or supplementing human efforts."

Wuhan: Artificial intelligence identified the first clues of the outbreak on 30 December

A good example of this are chatbots that make use of smart algorithms and natural language processing to disseminate information.

A chatbot called Bold360ai is already on the market able to interpret complex language for customers. As Bold360ai reportedly holds textual conversations, it 'remembers' context.

Last month, WHO teamed up with customer experience management platform Sprinklr to launch an AI-powered chatbot on Facebook Messenger to disseminate information about Covid-19 in four languages.

The initiative was part of the WHO Technology for COVID-19 Initiative, a pro-bono collaboration of technology companies brought together to fight the pandemic.

Professor Guang-Zhong Yang, founding dean of the Institute of Medical Robotics at Shanghai Jiao Tong University, says: "Robots can be really useful to help you manage this kind of situation, whether to minimize human-to-human contact or as a front-line tool you can use to help contain the outbreak."

While the robots currently being used can only rely on technologies that are mature enough to be deployed, he argues that roboticists should work more closely with medical experts to develop new types of robots for fighting infectious diseases.

"What I fear is that, there is really no sustained or coherent effort in developing these types of robots," he says. "We need an orchestrated effort in the medical robotics community, and also the research community at large, to really look at this more seriously."

One diagnostics tool being piloted in hospitals by The Stamford Institute for Human-Centered Artificial Intelligence is using depth and thermal sensors to spot Covid-19 symptoms among the elderly.

The sensors are able to spot early Covid-19 symptoms which could include temperature variations or changes in people's movements, for example an alert may be triggered if they remain

seated for longer periods.

The goal is to deploy them in people's homes. However, one challenge for the team is the need to protect privacy.

The institute's co-director, renowned computer scientist Fei-Fei Li, told the Exponential View podcast that the team was exploring how to build privacy into the technology and rejected the notion there always needed to be a trade-off between technology and privacy in the application of AI.

"The human aspect: privacy, respect, dignity, should not be an afterthought," she said. "From that point of view, I would not call it a trade-off. It is just part of the equation."

Yang agrees. "Respecting privacy, and also being sensitive about individual and citizens' rights, these are very, very important," he says. "Because we must operate within this legal ethical boundary. We should not use technologies that will intrude in people's lives."

Turner argues that ethical dilemmas associated with the pandemic, such as how to balance the need to protect the elderly and the importance of limiting long-term damage to economies, have parallels with AI.

"We face similar ethical dilemmas whenever we delegate decisions to AI: how should AI take such decisions, and are there any decisions which AI should not take?

"For the last ten years many have ignored these problems as they apply to AI – the question of who a self-driving car should prioritise in the event of a crash is often asked but rarely answered.

"Pandemics force governments and regulators to engage with ethical issues, and my hope is that this level of engagement will assist in shaping AI policy and regulation in the future."

A good example of this is the drive by several countries across the world to roll out contact tracing apps on smartphones.

'It is highly unlikely... that those who designed what would become the smartphone back in the early 1990s could have anticipated it being considered the "go-to" solution for resolving the challenges the current

> 'We need an orchestrated effort in the medical robotics community, and also the research community at large'
>
> *Professor Guang-Zhong Yang*

Condoleezza Rice: 'We have a unique opportunity before us'

pandemic presents,' wrote Reema Patel, head of public engagement at UK AI and technology think tank the Ada Lovelace Institute in a recent blog.

She was warning against technology 'solutionism' – an over-reliance on the ability of technology to solve complex problems that 'works well for the purveyors of smartphones and digital contact tracing apps... [but] works less well for those looking for multi-faceted interventions to resolve complex problems.'

However, the scramble to find a way out of the crisis – and the critical need to maintain public trust in these solutions for them to work – is forcing governments, regulators and privacy experts to engage with radical solutions.

In April, the Ada Lovelace Institute published a rapid evidence review into the implications of contact tracing apps that drew on the thinking of an array of legal academics

Exit Through the App Store? notes this is first pandemic of the algorithmic age, and asks 'whether, and how, the UK Government should use technology to transition from the Covid-19 global public health crisis'.

It calls for 'the introduction of primary legislation to regulate data processing and to impose strict purpose, access and time limitations on its use, which would also address concerns about other data-driven measures such as symptom tracking'.

> **'We are at war and we must win it! Using all means'**
>
> *Jacques Attali*

"The Government is right to explore non-clinical measures in its response to the COVID-19 crisis," said Carly Kind, director of the Ada Lovelace Institute. "But it must take action to ensure technological applications, such as the proposed NHS rollout of digital contact tracing, do not become counter-productive because of a failure to take account of both the barriers to deployment and the full impact on people and society.'

Turner welcomes the publication in January of the EU's White Paper on AI regulation, which seeks to strike a balance between the need to innovate and the protection of rights such as privacy, as a move in the right direction.

"Regulators are increasingly working with the private and public sector to understand how AI is being used and what problems could arise, but this work needs to go faster," he says.

"Although it is sometimes thought that regulation stifles innovation, in fact if regulation is done well then it can

provide a stable framework for technology development, because companies will be able to operate with greater certainty. Regulation can also increase public trust, which in turn leads to a greater uptake of technology."

He highlights WHO as being a trusted supra national body that is well placed to lead this debate and foresees greater international collaboration.

Back to the critical role of people and 30 December 2019. Wuhan Central Hospital doctor Li Wenliang had warned his former classmates about the virus in a social media group. This resulted in a summons from the local authorities to answer questions a matter of hours later.

Dr Li died on 7 February after contracting the virus. Days before, he told The New York Times that it would have been better if officials had disclosed information about the epidemic earlier. "There should be more openness and transparency," he said.

Many a media headline has likened the situation we face to a war, and perhaps there is some merit to the description.

Endorsing the C3.ai Digital Transformation Institute project, French statesman Jacques Attali said: "We are at war and we must win it! Using all means."

He added that the project "will organise global scientific collaboration for accelerating the social impact of AI, and help to win this war, using new weapons, for the best of mankind."

Historically, much robotics and technology research and development has been driven by the military.

It would be a welcome step forward for humankind if Covid-19 led to similar advances in the fields of medicine.

Sadly, the moment is likely to pass with old priorities springing back quicker than the economies.

Software as a medical device: the FDA's new approach

One example of how regulatory authorities are working to accommodate the challenges posed by AI and machine learning in the medical sector comes by way of the US Food and Drug Administration (FDA), which has been consulting on a regulatory framework for overseeing how these technologies are applied to software as a medical device (SaMD). It has conceded that the 'traditional paradigm of medical device regulation was not designed for adaptive AI and machine learning technologies'. Under its current approach, software modifications to SaMD products would require a new premarket review. The FDSAs new guidance envisages a 'predetermined change control plan' in premarket submissions for the original SaMD approval that would map out anticipated modifications to the software and identify the methodology to be used so that changes can be implemented in a controlled way that does not pose risks to patients. This is called the algorithmic change protocol. The FDA says it 'would expect a commitment from manufacturers on transparency and real-world performance monitoring for AI and machine learning-based software as a medical device, as well as periodic updates to the FDA on what changes were implemented as part of the approved pre-specifications and the algorithm change protocol.' The FDA goes on to flag this arrangement as allowing its 'regulatory oversight to embrace the iterative improvement power of artificial intelligence and machine learning-based software as a medical device, while assuring patient safety'.

To boldly go where no robot has gone before

Chris Johnson asks whether the law can keep up with the rapid pace of new developments in space exploration

Chris Johnson

Chris Johnson is space law advisor at the Secure World Foundation, an NGO focused on space sustainability. He also teaches space law at Georgetown Law School in Washington DC and at the International Space University in Strasbourg, France.

How did you become interested in space law?

I took an undergraduate degree in English with cognates in sociology and philosophy and with Latin as the language requirement as I was trying to get a broad, classical education. The essays and other writings of Francis Bacon made a great impression on me. He was a lawyer and statesman in his day job and a philosopher in his spare time. It struck me that lawyers use the logical techniques of philosophers and the rhetorical and language skills of novelists but apply them to practical ends. I went to law school in New York and practised in corporate and securities law. But I almost immediately began envisioning different career paths. While taking night classes on international law at New York University's School of Continuing and Professional Studies I came across a chapter in a textbook on aviation and space law which I was enthralled by. Space law seemed like a totally different reality to me. I attended an event where I met actual, practising space lawyers and was blown away that this was a serious field that you could work in. I took the LLM program at the International Institute of Air and Space Law at Leiden University in the Netherlands and then secured a series of internships at some amazing places including the United Nations Office for Outer Space Affairs (UNOOSA) in Vienna, NASA Headquarters in Washington DC and the legal division of the Headquarters of the European Space Agency (ESA) in Paris.

What do you see as the key legal issues for the sector?

In outer space, there is a proliferation of actors and activities that is challenging what modest laws we currently have.

Space was traditionally the preserve of national space agencies, militaries and large telecommunications companies with large multi-million dollar satellites in geosynchronous orbit (GEO). Militaries still see space as primarily a security domain, hence the recent creation of Space Force as a new branch of the US military. Indeed, there are increasingly worrying trends in the military uses of space, including the testing of anti-satellite technologies, and mysterious satellites creeping around the GEO which don't technically violate space law or international humanitarian law, but are very worrying.

But space has radically changed in the past decade and many more people can now get into space more quickly and cheaply. These include startup companies and universities, which are doing things that the current space law regime did not envision. This 'small satellite revolution' will continue and in the next decade we will return to The Moon with both human and robotic missions undertaken by a wide range of actors. Space manufacturing and resource acquisition of both lunar and asteroid resources is also on the near-term horizon. And we will have to mount missions to monitor (and perhaps respond to) potentially threatening near earth objects like asteroids and comets that threaten to impact Earth.

What are the issues with robots in space?

Robots pose no direct, fundamental challenges to the existing regulatory regime, including either international or national space law, as robots are still controlled by people on the ground and they are still under the supervision and responsibility of a state (or states). In a sense, all satellites are robots. The various rovers we have on different planets, like the Spirit, Opportunity and Curiosity rovers on Mars are our robot avatars. In addition, some robots have already been tested on the International Space Station (ISS), including Robonaut.

In the future, issues may arise if robots are programmed to act autonomously. We will then be confronted with many of the same challenges relating to autonomous robots in other domains. Readers might already be aware of the Campaign to Stop Killer Robots, as well as the UN Group of Governmental Experts on Lethal Autonomous Weapons Systems (GGE-LAWS).

In the context of space exploration and development, it is likely to be cheaper, easier, safer and more reliable to send robots with AI into

> **In the next decade we will return to The Moon with both human and robotic missions**

Interview: Space law

THE MIT HAS IDENTIFIED A NEW ANTIBIOTIC BY TRAINING A 'DEEP LEARNING' ALGORITHM TO SEARCH THROUGH A LIBRARY OF COMPOUNDS

space to look for present life or evidence of past life on celestial bodies (ie astrobiology), or to access and utilise lunar resources and built habitats and infrastructure.

Robots can withstand the vacuum of space, intense space radiation and g forces many times as great as fragile humans can.

However, carrying out some tasks which require precision or human intuition may require humans for a long time to come. The astrophysicist and Astronomer Royal Martin Rees spoke convincingly about this at the annual Breakthrough Discuss conference a few years ago.

Which areas of law deal with robots in space?

The use, authorisation, supervision and assurances for compliance with international law over any robots launched into space are carried out at the national level, in furtherance of a state's international legal obligations under international space law (especially the 1967 Outer Space Treaty). However, the use of robotics in the space environment is not directly addressed by any national space laws. A good starting point is Title 51 of the United States Code, which contains the main source of regulations for space systems, followed by the detailed regulations and regulatory schemes adopted by the various regulatory agencies.

Who regulates robots in space and what are the regulatory challenges? Which countries/institutions do you think are most effective on this front?

In a general sense, various US federal agencies would be interested in the use of robotic systems in space missions, projects and activities. They include the Federal Communications Commission (FCC), which regulates the use of frequencies, and the Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), which approves payloads and regulates launches and re-entries of space objects. The US Department of Commerce's Office of Space Commerce would also be an agency to coordinate with.

As previously mentioned, the GGE-LAWS looked at AI, but in the context of armed conflict, and not really on space.

It is possible that the

> **Because of the distances involved in space, robotics with some degree of autonomy will be crucial**

UN might look at robots in space, but primarily from an international peace and security perspective. For peaceful purposes, it seems that national approaches will prevail. States like Estonia and Finland are quite advanced in cyber governance, but they haven't considered the implications of space robots and their governance quite yet.

How important are ethics in this sector and what challenges are there on this front?

Ethics are generally not taken into account in the regulation of space activities, except perhaps as they inform crewed (human) spaceflight. Instead, rights, responsibilities, obligations and prohibitions are the mainstay of international and national space law, including who bears the risk of damage from space objects. However, one source of law where ethics could be involved is the code of conduct for astronauts aboard the International Space Station, which all partner countries have signed up to. The Committee on Space Research (COSPAR) rules on planetary protection, which seek to avoid the contamination of lifeforms to or from Earth, might also be regarded as reflecting ethical principles about preserving space environments and potential life on celestial bodies. The concerns about space debris, and fostering space sustainability of useful Earth orbits, reflect both practicalities, as we want to continue to use these orbits, as well as ethical concerns, in that we want to preserve these orbits for future generations. The French Space Agency (CNES), has an official ethics advisor called Jacques Arnould, but that's the only space agency with an official philosopher on staff that I know of.

What books on space law would you recommend?

Three excellent books on this topic would be Novacene – The Coming Age of Hyperintelligence By James Lovelock; On the Future – Prospects for Humanity by Sir Martin Rees; and Dreams of Earth and Sky by Freeman Dyson. These were all published relatively recently, and all of them will expand your thinking on many topics, including space and AI. For

> **We should invent new concepts of property, rights and obligations to suit our needs, interests and values**

space law, I would recommend The Handbook for New Actors in Space, which I edited, and finally, the textbook we use at Georgetown, Space Law – A Treatise, by Professors Francis Lyall and Paul Larsen.

How do you see the law governing robots in space developing in the next decade?

As AI advances, it will be robots which do the difficult, dangerous tasks in space, and therefore they will continue to be our avatars. There are many emerging and pressing issues in space law, from debris removal from low Earth orbit, to satellite servicing and more advanced capabilities like asteroid retrieval and utilisation of space resources. All of these will involve robotics.

It's very difficult to predict the future, but it's still important to try. The effort yields rewards, even if the prediction is doomed not to be perfectly accurate. So, looking to the future, robotics will make the access, exploration and development of outer space, including the Moon and other celestial bodies, quite different from the visions of the future of space travel that existed in previous decades. So, the future is not what it once was.

Our technology will advance, but space itself and the laws of physics will not. Because of the distances involved in space, robotics with some degree of autonomy will be crucial. It takes about three seconds for a signal to get to the Moon from Earth, but around 13 to 24 minutes for a signal to get to Mars and back to Earth. So the travel times mean that local autonomy will be necessary.

Human spaceflight is also dangerous, so using AI and robots will be safer, and probably cheaper. Robots will therefore be leading space exploration, even more so than the various generations of rovers and orbits already on just about every planet in the Solar System.

Turning to governance, lawyers naturally look to the past, and relying on past legal arrangements does often make sense. But because space is so different and beyond our experience, I would urge space lawyers to be wary of transposing previous legal concepts to the space domain. We should invent new concepts of property, rights and obligations to suit our needs, interests and values. Space law currently has a modest set of principles and a great deal of work will be necessary to expand it.

Bringing cryptoassets inside the law

The fallout from the demise of New Zealand exchange Cryptopia is adding to a growing body of law on the legal treatment of cryptoassets, write *Kushal Gandhi and James Highfield*

The UK Jurisdiction Taskforce's Legal Statement on the Status of Cryptoassets and Smart Contracts is proving to be influential both domestically and internationally for its analysis of the legal status of cryptocurrency.

The legal statement recognised that the design of cryptoassets may create some practical obstacles to legal intervention but 'that does not mean that cryptoassets are outside the law'. This is now developing into a trend.

In the English court judgment of AA v Persons Unknown, the court held that 'a crypto asset such as Bitcoin are property' for the purposes of being subject to an interim proprietary injunction.

Internationally, the High Court of New Zealand has recently released its landmark ruling in Ruscoe v Cryptopia Limited (in liquidation) CIV-2019-409-000544 [2020] NZHC 728, which referenced the UK legal statement and AA v Persons Unknown in determining

Kushal Gandhi

James Highfield

that cryptocurrency was 'property' and capable of being held on trust. This judgment is likely to be referred to in future cases in England, particularly, in relation to insolvencies involving cryptoassets.

These judgments arise from a growing number of recent cases which offer greater clarity as to the legal status of cryptocurrency. The rulings signify a developing global consensus as to the treatment of cryptocurrencies as the technology continues to develop.

Background

Cryptopia was established in 2014 as a cryptocurrency trading exchange. In 2017, the platform saw exponential growth as its userbase grew to more than 900,000, the majority of whom were from outside New Zealand.

It suffered a significant hack in January 2019, resulting in the loss of approximately $18m of cryptocurrency from its platform. It is now widely regarded as the biggest theft in New Zealand's history. As a result, the company was placed into liquidation.

The present ruling arose as a result

> **It is now widely regarded as the biggest theft in New Zealand's history.**

of an application by the liquidators as to the following issues:

- the legal status of cryptocurrencies held by Cryptopia, in particular whether they are a type of 'property' and could form the subject matter of a trust; and
- in providing a cryptocurrency storage and exchange service for its customers, whether Cryptopia was a trustee of the currency brought onto the exchange by account holders who invested in various digital assets (the 'account holders').

Is cryptocurrency 'property'?

The court found that cryptocurrency was a species of intangible personal property and an identifiable thing of value. In the judgment, Gendall J made reference to Lord Wilberforce's now-classic statement of the characteristics of 'property' put forth in the House of Lords case of National Provincial Bank Ltd v Ainsworth [1965] AC 1175 (HL). The criteria are that 'property' (i) must be definable; (ii) is identifiable by third parties; (iii) is capable in its nature of assumption by third parties; and (iv) have some degree

Analysis: Cryptocurrencies

SOFTBANK'S FIRST VISION FUND HAS OFFICIALLY CLOSED ITS DOORS TO NEW INVESTMENTS, HAVING SPENT JUST SHY OF $100M A DAY OVER 845 DAYS, ACCORDING TO TECHCRUNCH

of permanence or stability.

In the court's view, cryptocurrencies satisfied the standard criteria outlined by Lord Wilberforce and were a type of intangible property as a result of three interdependent features. Gendall J found that cryptocurrencies obtained their definition as a result of the public key recording the unit of currency, and that the control and stability necessary for ownership are provided by the private key attached to the corresponding public key and the generation of a fresh private key upon a transfer of the relevant coin.

The court recognised that two arguments are commonly raised to suggest that cryptocurrencies do not have the status of 'property'. Having considered them, the court dismissed them both. It found that the suggestion that common law recognises only two property classes, personal property and choses in action, was a 'red herring'. The court found the cases relied upon were not taking a narrow view as to what could be classified as property.

Similarly, the court acknowledged that the assertion that cryptocurrency was only a form of information was 'simplistic' and in the present case, wrong. The court was satisfied that cryptocurrencies were far more than merely digitally recorded information. This is consistent with the UK taskforce's statement, which acknowledged that, whilst it was difficult to formulate a precise definition, cryptoassets that are viewed as a 'a conglomeration of public data, private key and system rules' are not disqualified from being property on the ground that they constitute information.

Finally, the court dismissed that there were any public policy grounds why cryptocurrencies should not be considered as property.

The developing trend for cryptocurrencies to be treated as property is further demonstrated by a recent Supreme Court of India

> **The court acknowledged that the assertion that cryptocurrency was only a form of information was 'simplistic' and in the present case, wrong.**

> **With the growing market for cryptoassets and the cyber risk associated with them it is inevitable that there will be further victims like Cryptopia.**

case. In that instance, cryptocurrency was found to retain the fundamental elements of money and so, it was held to be treated as such.

Were the cryptocurrencies held on trust?

In finding that cryptocurrencies had the status of 'property', the New Zealand court was satisfied that they were capable of forming the subject matter of a trust. The question, however, remained as to whether in the present case the digital assets were held on trust for account holders.

This issue depended largely on the facts of the case. After a detailed analysis of what constitutes a trust, the court concluded that each type of cryptocurrency was held on separate express trusts by Cryptopia, with the beneficiaries being all account holders holding currency of the relevant type. The fact that Cryptopia held the private keys such that the account holders did not know the private key associated with any particular coin was important in concluding that the trusts were constituted by cryptocurrency.

In deciding the cryptocurrencies were held on trust, the court distinguished the current case from the Singaporean case of B2C2 Ltd v Quoine Pte Ltd. In Quoine, the Singapore Court of Appeal acknowledged that cryptocurrencies were 'capable of assimilation into the general concepts of property' but rejected the view that they were held on trust for one of the parties.

Gendall J was satisfied that the factual scenarios could be distinguished. Amongst the key findings in Quoine was that the mere fact that Quoine's assets were segregated was not 'a decisive factor' in and of itself that would lead to the conclusion that there was a trust.

However, in the Cryptopia case there were a number of additional factors which pointed to Cryptopia being a trustee. These included express trust provisions in the amended terms and

conditions, as well as the fact that the company's internal financial accounts and GST returns demonstrated that it did not assert any ownership in the cryptocurrency, beyond being an account holder itself.

Such divergence in treatment makes clear that rulings on cryptocurrencies and whether they are held on trust, like other forms of property, will be fact specific and it will be important to review the arrangements put in place. This may also create more competition in this space.

Recovery of stolen digital assets

The court considered certain further issues, including how any recovered stolen digital assets should be dealt with. Gendall J acknowledged that any recoveries of misappropriated cryptocurrency should be returned to the account holders who suffered a loss as a result of the misappropriation. As such, the court detailed the following steps:

a) as at the date of the theft, the liquidators should determine the account holders affected and their relative shares in any trust of the digital assets which are the subject of the theft. The liquidators should then apply the loss from the theft pro rata to those existing holdings;

b) to the extent that subsequent to the theft any account holder acquired digital assets of the type that suffered the theft and those assets were added to the relevant trust assets, no reduction for the theft should be applied to that account holder's share in the trust assets; and

c) any recoveries of cryptocurrency lost as a result of the theft should be applied pro rata to make up the loss suffered by such account holders as were affected by it.

Conclusion

With the growing market for cryptoassets and the cyber risk associated with them it is inevitable that there will be further victims like Cryptopia. The fact that there is growing judicial analysis combined with greater forensic tools on tracing of cryptoassets is a helpful start to the development of legal tools to help mitigate the risks.

Kushal Gandhi is a partner in CMS's finance disputes team. The article was co-authored by trainee solicitor James Highfield.

Assembling the right ingredients for successful AI implementation

Bryan Bach provides a step-by-step guide to how law firms should set about implementing their first AI-powered project

AI is a transformational technology that's continuing to gain momentum in the legal, financial and professional services sectors. But many firms don't yet have the internal knowledge or training to fully unlock its potential.

We've found the best way to ensure client success is to educate and build up experience inside the firm about how AI works and how to apply it to a broad spectrum of business problems, which is why we launched AI University (AIU) in mid-2018.

AIU is a multiday course available in two formats: an in person offering delivered at the customer site over two full days, and a newly introduced live, virtual model delivered on-line during three half-day sessions. With the virtual offering, legal and financial services professionals can actively participate in project-driven, best-practice, remote AI workshops that use their own, real-world data to address specific business issues – which is particularly relevant now, as work-from-home becomes the new norm worldwide.

Bryan Bach

Training and learning to go beyond the basics

While early entrants in the legal AI market focused on out-of-the-box models to address specific use cases like reviewing employment contracts or lease terms, we find these point solutions by themselves very limited. They may serve as a starting point for engaging the technology but are narrowly focused; they can't easily accommodate more nuanced and unique content, or allow an organisation to address a broader range of issues.

For those that want this option, we do offer a large number of pre-packaged models that can be used straight away, but our main focus is on providing a highly trainable AI engine and teaching transferable skills. As individuals continue to apply and hone these learned AI skills, they are able to take a more innovative approach to efficiently solving business issues and driving business transformation. The knowledge gained on an initial AI project

> **Our main focus is on providing a highly trainable AI engine and teaching transferable skills**

compounds on itself and becomes additive. Firms can focus on more fine-grained results in subsequent projects, or delve deeper and use the models they've developed to apply to other document types and business problems.

The models that clients build themselves – using their own data – are often superior to out-of-the-box models that are developed and trained using publicly available data from sources like Edgar, which is one of the reasons we encourage customers to take this step. Additionally, custom models allow customers to capture the data points that are most important or relevant to them and that reflect the particular contracts, leases, share purchase agreements, or other documents that they're working with, providing a 'tailor fit' that out-of-the-box models can't provide. Moreover, we don't think that technology companies should simply throw a bunch of pre-packaged tools at customers and then walk away expecting customers to figure out how to leverage AI to its full power. Transformational results are achieved through a deeper dive.

That's where AIU comes into play – either the in person or virtual offering. We tackle a client's first project right alongside them – like a due diligence review or some other initial application of AI to get their feet wet. We use 'project one' as a live training exercise to help them develop best practices and repeatable processes that will allow them to implement the technology across their organisation for 'project two' and well beyond. Using their own data and solving for a real business issue helps to spur ideas of how, where and for what else they can leverage the technology.

Part of AIU is familiarising customers with the product – what the AI solution is, how it works, what it can do. But an even larger part of AIU is teaching customers how to think about

AI in general and how to approach an implementation in their organisation. Along the way, we dispel a few myths and share plenty of best practices.

AI Myths

Myth 1: AI is a magic wand.

AI is a very powerful technology, but for many scenarios and use cases, it's not realistic to expect to 'wave the AI magic wand' and instantly get perfect results. Some advance planning and preparation are typically required – but it's a straightforward process, and certainly nothing for firms to be intimidated by.

Myth 2: The robots are coming to take our jobs.

Fear not: AI is not going to be taking anybody's job. Instead, it's going to give lawyers a new tool to do their jobs more efficiently – and to gain a competitive edge over their competitors.

This second myth speaks to the fact that AI is a relatively new technology and that there is learning to be done about how this emerging technology fits into the legal industry and what role it will play. The objective of AIU is to help firms establish AI centres of excellence, understand what AI is and *is not* well-suited for, learn how to train their AI engine with precision and accuracy for best machine learning results, and determine how to leverage the right mix of AI methods to achieve their objectives. We want to make sure customers are armed with the tools and training to put AI to work across their data stores and documents, so that they can help their organisations unlock critical knowledge and insights in a repeatable way across the enterprise. Our approach, you might say, is to teach a customer to fish, not give them a fish every day.

So, how best to make this actually happen?

At AIU, AI instructors with deep technology and legal expertise work with clients in advance to help identify use cases for the session and to facilitate the most effective approach to extraction techniques for client projects. The daily curriculum includes demonstrations with user data and individual and group exercises to evaluate and deepen user skills.

> **Fear not: AI is not going to be taking anybody's job. Instead, it's going to give lawyers a new tool to do their jobs more efficiently**

Notably, we work with the customer's actual data, which results in a richer learning experience.

Approaching AI the right way: best practices

In a typical AIU, we focus on some key best practices that help set customers up for success with AI in general:

● Focus on the problem and find the right people

An AI team should include a mix of customer stakeholders, including data scientists, knowledge managers, lawyers, partners, contract specialists, and trained legal staff. It's important to have a subject matter expert – preferably someone at the senior partner level –who really understands the use case that is going to be tackled with AI.

This means that they can really drill down on questions like: what is the business problem they're trying to solve? What sort of documents are they dealing with? What are the data points they're looking to extract, and how can they tease those data points apart if they're embedded in documents in a fairly complex way?

While that senior level person is fundamental to making sure things are done properly at the outset, he or she might not want to be the one using the AI on a day-to-day basis afterwards. It's important, then, to ensure that the people who *are* actually going to be using the tool on a day-to-day basis are also in the room. Amongst them, make sure you have a technology based or knowledge-based person who can answer questions like: where are the documents coming from? Who manages those databases? Is there someone who will be in charge of uploading those documents? These are all important questions that warrant careful consideration.

● Give the data the attention it deserves

Too often, people don't consider the time and effort required to make a good model. Another common mistake in AI implementations is wanting to skip straight to the capture stage. This leads to inconsistency and – ultimately – to inferior models. An upfront investment in data curation will result in better and more accurate models. These models will provide a greater return in the long term.

To guide this data curation process, you'll also want to create a design document that serves as a 'playbook' for the entire team to refer to. This ensures everyone is tagging data points consistently.

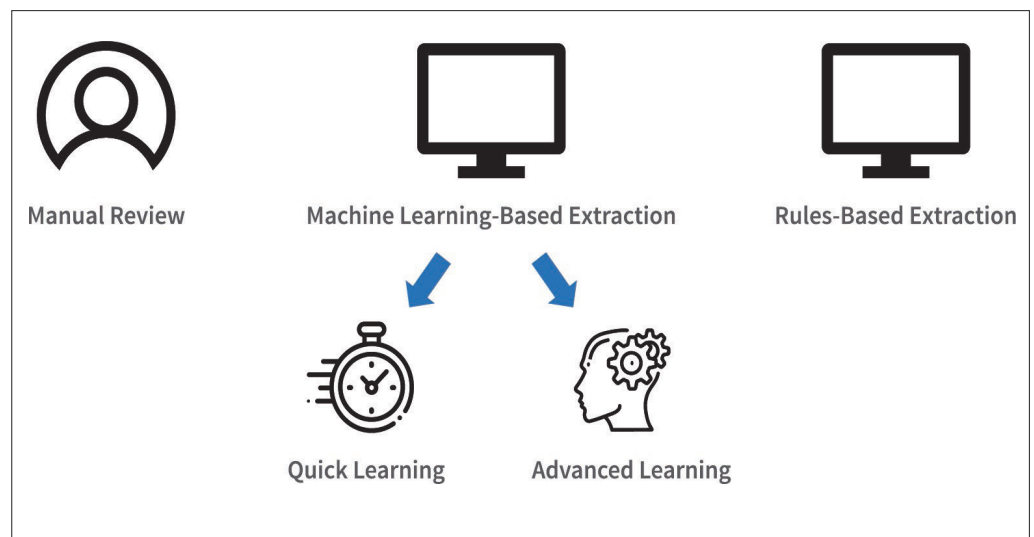### ● Understand the different tools in your toolbox

There's more than one way to get your hands on the data points you're seeking to extract – and it's important for users to know what the different tools are, and how to use one or more of them in combination.

The image below illustrates several different ways that a firm can extract information from a document.

Questions most customers have are: when do I use which method?

Methods for extracting data from a document

Manual Review   Machine Learning-Based Extraction   Rules-Based Extraction

Quick Learning   Advanced Learning

Analysis: Legaltech

And when and how do I combine methods for the best outcome?

Sometimes the answer comes down to volume. Let's say you're going to review 10 share purchase agreements. Even if those documents are 100 pages long, it might make more sense to review those manually than to try to train a model to identify clauses in those documents. For starters, you might not have enough samples to tag – and by the time you've tagged five samples, you may as well just go ahead and review the other five manually as well. If you had 1,000 documents to review, obviously that would be a different story and would favour using machine learning.

AIU familiarises customers with two different types of machine learning. The quick learning algorithm – as the name suggests – only requires you to tag a few examples of what you're looking to extract before you can run it across the remaining documents. The advanced learning algorithm, meanwhile, requires you to tag at least 30 samples of the data point before you can run it across the remaining data set. The advanced learning algorithm is a more nuanced tool, but it requires more front-end training.

Sometimes, the way a document is laid out is consistent enough that you don't need an algorithm at all – instead, you can take a rules-based approach. Think of rules like the Boolean terms you'd use to find messages in your inbox – for example "Show me all messages where *from* is 'Jane Montague' and *received* is '2019'." Rules are quicker to write than an algorithm, and quicker to run across a data set. As the saying goes, sometimes you just need a flyswatter, not a cannon.

By the end of AIU, customers will be able to approach a business problem and ask themselves: is this a manual review situation, or is AI going to be applicable here? If AI is applicable, which approach do I want to use – machine learning or rules? And within machine learning, does this seem more like a quick learning algorithm or an advanced learning algorithm situation? Creating a review form that is capable of drawing on both rules and machine learning allows firms to take a 'combo' approach and use different methods to pull out different pieces of data from their documents.

Data privacy
Although we make a point of working with customers' real, actual data during AIU to provide more meaningful results for them, the actual algorithms and the models they create are 100% theirs. It's their IP – they get to retain those models, whether on-premises or in the cloud, ensuring compliance with security and privacy measures within the firm and the jurisdiction in which they operate.

With this knowledge and training under their belts, companies are well positioned to start leveraging AI in transformative ways.

Using AI to solve real world problems
Companies that are seeking to innovate with AI can see the value that training like AIU delivers by looking at companies that are successfully using the technology to solve real world business problems.

AI in Action: UK law firm makes accurate predictions around insurance claims
Challenge: A leading insurance risk and commercial law firm based in the UK and Ireland needed to capture data from its documents to analyse and make accurate predictions around claims outcomes.
Benefit: Built models that can quickly and accurately extract information from largely unstructured documents for use in analysing claim costs and likely outcomes, allowing firm to provide better advice for its clients while reducing claims processing time.

AI in Action: large toy manufacturer solves NDA review
Challenge: Lack of corporate legal department resources to respond to numerous requests for information contained within contracts.
Benefit: Processed 6,000+ nondisclosure and influencer agreements within 40 minutes. Now expanding usage of AI to licensing and distributorship agreements.

AI in Action: global financial services company tackles LIBOR
Challenge: In advance of upcoming LIBOR transition, the firm needed to review over 1,000 documents (including mortgages, promissory notes, and mortgage deeds of trust) for 16 data points.
Benefit: Cut 50% off the expected review time to identify LIBOR documents with duplicate document detection. 1,500 hours saved from the overall review. When an additional 220 documents showed up for review at the last minute, a simple drag-and-drop into the AI engine allowed timely processing in a matter of hours, rather than an associate

> As the saying goes, sometimes you just need a flyswatter, not a cannon

having to cancel her weekend plans to review the documents.

Once they've gone through AIU, organisations are well positioned to start using their AI engine for these types of more advanced use cases. The knowledge and expertise they gain also opens the door for them to make use of other AI-powered technologies, which can help them find, analyse and identify organisation information across disparate systems and unlock key insights. One step at a time, organisations can start to create their own AI center of excellence.

In this way, AI serves as a platform that – when deployed correctly – can create transformational results. While some projects will remain 'push button,' many projects will require some degree of advance preparation, set-up, and understanding around when to best use which tool for what task. Until organisations start hiring people who natively have these AI skill sets, everyone will need to be 'coached up' a little bit. Fortunately, AIU delivers this type of deep knowledge, providing a foundational understanding that can help firms fully deliver on the promise of AI.

Three best practices to apply to any AI implementation
Don't Forget the Daily Users. In addition to including a senior level person who's defining the business problem that AI will tackle, make sure your AI team also includes the people who will actually be using the tool on a day-to-day basis.
Garbage In, Garbage Out. Invest the time upfront in making sure everyone is tagging data the same way – otherwise, the accuracy of the model will suffer. Create a playbook everyone can refer to, to keep everybody on the same page.
Know When the Juice is Worth the Squeeze. There are several different tools for extracting data. For a low volume project, manual review might be the most practical way forward. But for larger jobs, AI is worth exploring – and machine learning, rules, or a mix of both offer their own advantages.

Bryan Bach is the US AI University Coordinator at iManage

NEXT ISSUE

IN THE NEXT ISSUE FEATURES INCLUDE:

Opinion: Facebook's Libra cryptocurrency can be a force for good

Analysis: the need for legislation addressing AI inventors

Law in practice: Securing regulatory approval for facial recognition technology

Regular sections: news analysis, Q&A and deals round-up

Follow us on...

[in] [twitter]

If you would like to become a country correspondent for The Robotics Law Journal please contact Claudia Tan claudiatan@globalcitymedia.com

---

Analysis and insight for the industry - lawyers, regulators, manufacturers and users

THE ROBOTICS LAW JOURNAL

SUBSCRIPTION INFORMATION

The robotics and artificial intelligence sector is experiencing exponential growth across the globe in sectors as diverse as retail, banking, transport, energy, telecoms, media, sport and agriculture, to name but a few. The laws and regulations governing robotics and artificial intelligence are continuously changing to keep up with technological developments. The expanding list of concerns includes the protection of civil liberties, privacy and security, the impact on employment and the environment, and the invention, production, distribution and protection of these new technologies.

The Robotics Law Journal provides lawyers, manufacturers, governmental agencies, entrepreneurs and investors working in the industry with a clear understanding of the increasing opportunities, problems and solutions in this thriving sector.

YOUR ANNUAL SUBSCRIPTION TO THE ROBOTICS LAW JOURNAL WILL BRING YOU:

The Robotics Law Journal delivered to you bi-monthly in a digital format via email
The Robotics Law Journal posted to you bi-monthly in a paper/hardcopy (optional)
Full access to the Robotics Law Journal online service which will include:

- Latest issues and archived issues
- All premium editorial content
- Regulation update
- News alerts bringing you the latest breaking news
- Timeline of key industry regulatory and other milestones

For more information on how to subscribe please contact
subscriptions@globalcitymedia.com
or call +44 (0) 20 7193 5801

THE GLOBAL LEGAL POST