Artificial Intelligence in insolvency work: Transforming critical care

Joanna Goodman reports on the use of Artificial Intelligence and its role in the insolvency profession

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Insolvency and restructuring could be described as the corporate equivalent of critical care – bringing together multiple expert practitioners to provide life-support to some companies, and help them on the road to recovery, and palliative care to others.

And just as in medicine, advanced technology is transforming how critical care is delivered, identifying key challenges and smoking guns and predicting outcomes more accurately to improve a patient's chances, manage uncomfortable procedures and terminal cases with care and efficiency while, importantly, providing pain relief throughout.

Insolvency and restructuring work applies standard rules and processes to a specific set of circumstances, which are different for each company, and commonly involves managing large sets of company documents. This combination of rules and variables make it an ideal practice area for artificial intelligence (AI) to be applied to data capture and classification and process automation.

As Ed Macnamara, global restructuring & insolvency lead partner at PwC, explains, this goes beyond using machine learning to automatically apply accountancy rules and ensure creditor transparency. "*Data analytics and artificial intelligence tools hold the key to making processes more efficient, providing deeper insights and unlocking value more quickly. Where tasks are repeatable, and the approach can be defined, AI and other technologies play an important role in, for example, an insolvency practitioner's formal reporting requirements or detailed investigative work. At PwC we are using the latest technologies to work with the data and quickly get to the root of the issue, helping to drive efficiencies.*"

Litigation, and specifically e-discovery which involves managing large volumes of data, was an obvious starting point for legal AI, and technology assisted review (TAR) has particular application to insolvency investigations. TAR automates document review by using predictive coding to classify electronic documents. Early iterations of TAR required lawyers to review a sample set of documents and select the relevant ones. The software would then apply the same selection criteria to the entire collection, saving time and money by reducing the human element to the first and final stages of the review process. As technology became more sophisticated, AI engines reduced the human element further, by replacing sampling with comprehensive analysis of entire document sets for relevancies and anomalies. Although this technology is reducing headcount for routine tasks, experts are still required to provide the tailored advice and support that companies in difficulty require.

Cloud platforms for big data and e-discovery applications make litigation support and deal due diligence technology practical, accessible and cost-effective in the face of the exponential growth in data volume and the variety of media and platforms.

AI software such as Luminance (www.luminance.com) which identifies patterns in any multimedia dataset is ultimately scalable, as it has the ability to 'read' an infinite number of documents contemporaneously and in exactly the same way. It still requires a human to check the output: although algorithms do not make human errors, they may find false positives or misunderstand context. Bespoke e-discovery software such as Relativity (www.relativity.com) uses algorithms to identify patterns and concepts, and offer additional features including visualisation tools that support litigation strategies, e.g. whether to pursue a claim through the courts.

In a recent article for *Recovery*, Robin Ganguly, a senior associate at Bryan Cave Leighton Paisner LLP, highlights the application of TAR to investigations where insolvency practitioners need to establish whether there has been dissipation of assets. "*If predictive coding is employed to conduct a review of the company's books and records to search for leads, TAR has the ability to rank the documents by relevance so that humans can begin reviewing the most relevant documents, hopefully finding what they need before the time or money runs out.*" The level of review accuracy can be adjusted to an appropriate level either for a general investigation, or to pinpoint particular documents of types of document. Although not all TAR involves AI-powered data analytics, sophisticated products are required to investigate larger and more complex data sets across multiple platforms and media.

In another article for *Recovery*, Simon Edel and Olivia

Lancaster highlight how technology helps restructuring professionals analyse financial information, helping to identify performance drivers and turn around failing companies. Other emerging technologies used in insolvency include real-time accounting tools, and the use of drones to profile large assets such as property and land, and online platforms for creditor information and asset sales.

Macnamara explains how PwC uses intelligent software to support banks in selling non-core or non-performing loan portfolios. "*We're using software to extract key information from banks' records, reading thousands of loan documents in a matter of minutes and identifying important credit information including borrower details, guarantors, collateral specifics and more. Not only is this faster, highly accurate and able to cover multiple languages, it's far more cost effective than historical means, adding speed and real value to the process.*"

AI for insolvency is not all about number crunching and automatically applying accountancy rules. ROSS Intelligence (www.rossintelligence.com), the first AI research tool to be employed in a law firm, was initially trained to understand and analyse insolvency legislation and regulation. ROSS is, in effect, a professional support lawyer with detailed insolvency expertise. Lawyers type in questions using natural language to find relevant, up-to-date case law and match this with core legal principles. Features include the ability to extract legal points, quotes and precedents to support an argument. ROSS has expanded to cover multiple practice areas, but it was first employed in law firm insolvency departments.

Intelligent document automation tools are used to produce the necessary documents to get a company into insolvency and contracts needed for buying, selling or restructuring a business. There is a large and growing choice of contract automation tools, such as Thomson

Reuters ContractExpress (www.contractexpress.com). Kira Systems (www.kirasystems.com) applies machine learning to both contract analysis and creation.

These dynamic forms capture information and expedite processes, enabling insolvency teams to work leaner and scale their efforts. However, even intelligent automation does not replace the strategic thinking that goes into creating restructuring or administration sale documents or deciding whether to trade out. As one practitioner observed, AI can't do the thinking that fits behind complex schemes of arrangements or deal with the human dynamics that lie behind commercial decisions and outcomes.

Technology is used for prevention as well as cure, supporting investigations, research and analysis, by tracking companies that might fail, and providing information and insights to companies that have exposure to businesses that are at risk. Widely used tools such as Begbies Traynor's Red Flag Alert gather information from Companies House, the Land Registry and other public sources and apply algorithms to identify patterns of behaviour that might suggest that a company is in financial difficulty and enable action to be taken before it is too late.

Mark Fry, partner at Begbies Traynor explains how Red Flag Alert has developed into a real-time decision-support tool that enables insolvency practitioners to aid a business in distress before it reaches the point of no return. "*In early 2000 we created Red Flag Alert: a business financial database that tracks business performance and provides intelligent insight into the associated risks of insolvency. The product has undergone a number of revisions since then to create a fluid ruleset and bespoke algorithms that allow the group and its clients to make educated decisions based on large volumes of data over decades. We use a suite of technologies (some proprietary) to draw on tens of millions of data points and overlay sector, location and wider business sentiment*
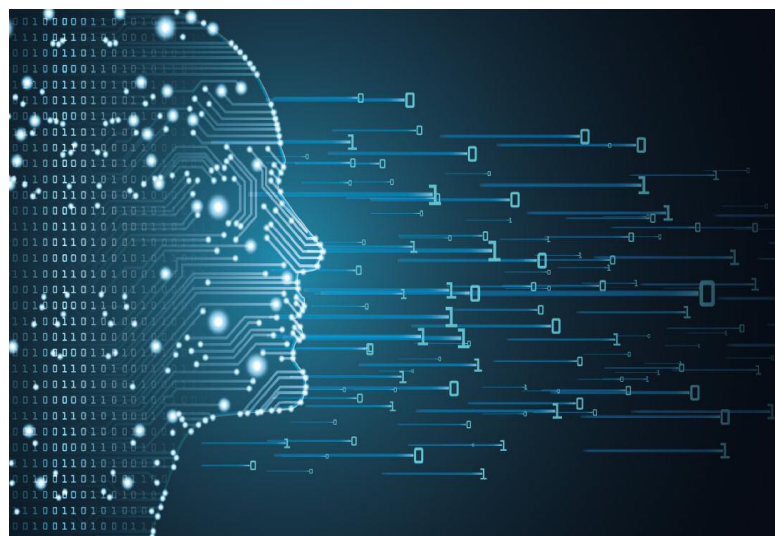
conditions in order to create an expert system output that adapts with market conditions."

Looking ahead, but not too far, Begbies Traynor is investigating big data analytics and data science technologies. "*This will add an active and intelligent predictive component to the group's insolvency armoury, allowing early signs of trouble to be identified more quickly and accurately so that positive action can be taken,*" says Fry. He anticipates advances in modular machine learning automation tools increasing productivity, and deep learning to data analytics enabling outputs to transcend from information and insights to knowledge and wisdom.

PwC's Macnamara predicts that as the business world becomes more complex, due to globalisation and other factors, "*given the potential permutations and combinations, it just won't be possible to [handle insolvency and restructuring work] manually. While I don't believe technology will ever stop insolvencies from happening, it will evolve the role of the insolvency practitioner with proportionally more time being spent on the key strategic aspects of the case and less on the more procedural elements.*" He believes that AI is on its way to becoming "*an essential tool in understanding whether a business is viable or not and designing the optimal restructuring solution.*" ∎

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> **INTELLIGENT AUTOMATION DOES NOT REPLACE THE STRATEGIC THINKING THAT GOES INTO CREATING RESTRUCTURING OR ADMINISTRATION SALE DOCUMENTS**
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