

Introducing the Corporate Restructuring Machine: An Open Platform Approach

Law Working Paper N° 830/2025

March 2025

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Abstract

The promise of Artificial Intelligence (AI) has become apparent. Yet how will AI affect corporate reorganizations? Based on previous work on the use of AI applications in negotiations, we argue that the potential of such applications to increase the efficiency of corporate workout negotiations is significant. To do so, we imagine the “Corporate Restructuring Machine” (CRM). This is a private, online platform armed with AI tools and services that are designed to support or even automate corporate workouts (out-of-court restructurings). Stakeholders, particularly creditors and shareholders, could join the platform and opt into AI applications at different times, for different services, and at different prices. These tools promise to allow parties to make better decisions in a much smoother process. We describe in detail the process of setting up and running the CRM, based on the current practice of corporate workouts. We demonstrate how old and new contractual solutions to financial distress could be effectively implemented with the CRM. This includes the “London Approach” and the INSOL Principles for corporate workouts, and various proposals for concluding “bankruptcy contracts” or choosing the applicable bankruptcy regime. The endpoint of the development could be a fully automated (AI-driven), comprehensive and private reorganization process/system.

Keywords: Bankruptcy, Corporate Reorganization, Corporate Workout, Out-Of-Court Restructuring, Artificial Intelligence, Private Ordering

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INTRODUCING THE CORPORATE RESTRUCTURING MACHINE: AN OPEN PLATFORM APPROACH

Horst Eidenmüller[‡] and Jared Mayer^{*}

WORK IN PROGRESS—DRAFT 2/20/25

The promise of Artificial Intelligence (AI) has become apparent. Yet how will AI affect corporate reorganizations? Based on previous work on the use of AI applications in negotiations, we argue that the potential of such applications to increase the efficiency of corporate workout negotiations is significant. To do so, we imagine the “Corporate Restructuring Machine” (CRM). This is a private, online platform armed with AI tools and services that are designed to support or even automate corporate workouts (out-of-court restructurings). Stakeholders, particularly creditors and shareholders, could join the platform and opt into AI applications at different times, for different services, and at different prices. These tools promise to allow parties to make better decisions in a much smoother process. We describe in detail the process of setting up and running the CRM, based on the current practice of corporate workouts. We demonstrate how old and new contractual solutions to financial distress could be effectively implemented with the CRM. This includes the “London Approach” and the INSOL Principles for corporate workouts, and various proposals for concluding “bankruptcy contracts” or choosing the applicable bankruptcy regime. The endpoint of the development could be a fully automated (AI-driven), comprehensive and private reorganization process/system.

I. INTRODUCTION

Artificial Intelligence (AI) tools have passed the inflection point of their exponential growth, and the law is scrambling to deal with their impact. Much of current scholarship and policy-making focuses on the regulation of

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AI.¹ The European Union (EU), for example, has recently passed an “AI Act”.² It classifies AI applications by their risk of causing harm and imposes different types of regulations such as bans, quality controls, and transparency requirements for different AI applications, depending on their risk category.

Just as important is how AI will change the substance of legal rules and legal practice.³ How will doctrines of private and public law, rules of procedure and evidence, or the practice and interpretation of law evolve when big data and AI infiltrate their domain? If data replace evidence, and algorithms augment and replace human discretion, how will the content of the law change? What will happen to lawyering and the legal profession?⁴

The law and practice of corporate bankruptcy will not be immune to these questions. Liquidating or restructuring a financially distressed corporation is a significant economic and legal undertaking. The interests of many different (financial) stakeholders must be assessed and reconciled. Important economic decisions must be taken under uncertainty. Is it economically sensible to restructure the distressed company? How could a viable new financial structure look like? What will be the revised business model?

¹ See, for example, JACOB TURNER, *ROBOT RULES: REGULATING ARTIFICIAL INTELLIGENCE* (2018); *RESPONSIBLE AI: A GLOBAL POLICY FRAMEWORK* (Charles Morgan, ed. 2019).

² Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 (“AI Act”), Official Journal of the European Union L, 12 July 2024, <http://data.europa.eu/eli/reg/2024/1689/oj> (last visited December 18, 2024).

³ This question was the focus of a symposium at The University of Chicago Law School on “How AI Will Change the Law” on April 12-13, 2024. See the conference announcement at [How AI Will Change the Law Symposium, Cohosted by the Coase-Sandor Institute, the University of Chicago Law Review Online and Oxford Business Law Blog | University of Chicago Law School](#) (last visited December 19, 2024). It prompted us to start thinking about how AI will change corporate bankruptcy and restructuring.

⁴ See John Armour, Richard Parnham & Mari Sako, *Augmented Lawyering*, 2022 U. ILL. L. REV. 71 (2022) (discussing how AI will augment the capabilities of human lawyers who use AI-enabled services as inputs to their work and generate new roles for legal experts in producing these AI-enabled services).

Managing the complex legal process of a corporate bankruptcy or an out-of-court restructuring is an Eldorado for law firms. Top lawyers now charge up to US-\$ 2,500 per hour for bankruptcy work.⁵ Professional and consulting fees in the Lehmann bankruptcy amounted to US-\$ 2.56 billion.⁶ The case for streamlining processes with the help of AI and to make better informed decisions on the future of a distressed firm is obvious.

This is true especially for out-of-court corporate restructurings or “corporate workouts”, as they have come to be known.⁷ Corporate workouts involve high-stakes multi-party negotiations without a clear procedural framework as provided, for example, in Chapter 11. This gives the parties the freedom to design workouts flexibly, free from the constraints imposed by a rigid legal process. They can also save a significant portion of the indirect bankruptcy costs that accompany financial distress: typically, the loss in firm value in a court-supervised reorganization is much higher than in a corporate workout.⁸

At the same time, the lack of a clear and stable procedural framework for corporate workouts creates unique challenges for managing the restructuring process. Successful workouts require consensus building between key stakeholders. Yet individual claimants find themselves caught in a multi-party prisoners’ dilemma in which defection is a dominant

⁵ Evan Ochsner, *Big Law Bankruptcy Fees Reach \$2,500 an Hour for Top Lawyers (1)*, BLOOMBERG LAW, February 5, 2024, [Big Law Bankruptcy Fees Reach \\$2,500 an Hour for Top Lawyers \(1\)](#) (last visited December 20, 2024).

⁶ Erin Denison, Michael J. Fleming, and Asani Sarkar, *Lehman’s Bankruptcy Expenses*, LIBERTY STREET ECONOMICS, January 15, 2019, [Lehman’s Bankruptcy Expenses - Liberty Street Economics](#) (last visited December 20, 2024).

⁷ See, for example, World Bank Group, A TOOLKIT FOR CORPORATE WORKOUTS 4 (January 2022).

⁸ See in detail Section III *infra*.

strategy.⁹ Solving this free rider problem is one of, if not the most important, challenge for successfully engineering a corporate workout.¹⁰

AI tools will not be the first to develop solutions to these problems. In fact, corporate restructuring practice has long developed legal and practical tools to address these and other challenges faced by corporate workouts. Starting in the 1980s and 1990s, coordination between different types or groups of creditors had been supported by informal rules and business practices such as the London Approach to corporate workouts or the INSOL Principles for a global approach to multi-creditor workouts.¹¹

However, informal rules and business practices for workouts have now essentially lost their function. Such rules and practices are sensible tools to the extent that the debt structure of a company is concentrated, homogeneous, and stable—such as when a firm’s key financing is provided by a handful of commercial banks in a syndicated loan. Dispersed debtholders with heterogeneous interests and an unstable composition of the creditor body is a situation in which neither the London Approach nor the INSOL Principles can flourish.

Of lately, so-called “Liability Management Exercises” have received a lot of attention in the United States and beyond.¹² In essence, these are transactions which seek to leverage “flexibility” within existing debt structures to create refinancings and unlock fresh capital. However, typically only a fraction of the creditor community benefits from these “exercises”. Intransparency and backroom dealing are common, and the legality of the transactions is often in doubt.

⁹ See HORST EIDENMUELLER, UNTERNEHMENSANIERUNG ZWISCHEN MARKT UND GESETZ: MECHANISMEN DER UNTERNEHMENSREORGANISATION UND KOOPERATIONSPFLICHTEN IM REORGANISATIONSRECHT 19-22 (1999).

¹⁰ See, for example, Mark J. Roe, *The Voting Prohibition in Bond Workouts*, 97 YALE L. J. 232, 235-239 (1987).

¹¹ See in detail Section III *infra*.

¹² See in detail Section III *infra*.

Hence, the current corporate workout practice is characterized by a high degree of intransparency and procedural fragility. Transactions are concluded in secret, and success in terms of a solid new legal and financial architecture for the troubled company is far from guaranteed. Corporate workouts tend to be inherently unstable. Furthermore, human decision-making in complex situations is known to suffer from many systemic errors and biases.¹³ Decisions taken in corporate workouts are particularly susceptible to such errors and biases.

Can AI applications improve matters? How exactly can such applications be best used in out-of-court corporate restructurings? These are the research questions we explore in this article. Given the rapid progress of AI applications, especially in the last two years, it would be surprising if corporate workouts could not benefit from such applications both at the level of the negotiation process and at the level of decision-making on the core problem, namely, the refinancing and economic restructuring of a financially distressed firm. The private actors involved in a workout have the incentives and flexibility to test and implement innovative technological solutions to take the practice of out-of-court restructurings to the next level.

The core idea of the article is the introduction of a private, online and open platform designed to support or even automate corporate workouts, using Artificial Intelligence (AI) tools and services. We call this the “Corporate Restructuring Machine” (CRM). Stakeholders, particularly creditors and shareholders, could join the platform and opt into AI applications at different times, for different services, and at different prices.

Based on previous work on the use of AI applications in negotiations, we argue that the potential of such applications to increase

¹³ The literature is vast. For an overview by pioneers of the field see DANIEL KAHNEMAN, *THINKING, FAST AND SLOW* (2012); RICHARD H. THALER, *MISBEHAVING: THE MAKING OF BEHAVIORAL ECONOMICS* (2016).

the efficiency of corporate workout negotiations is significant. Better informed parties will make better decisions in a much smoother process.

We demonstrate how old and new contractual solutions to financial distress could be effectively implemented with the CRM. This includes the “London Approach” and the INSOL Principles mentioned above. These instruments could be revived with the CRM. It also includes various proposals for concluding “bankruptcy contracts”¹⁴ or for choosing the applicable bankruptcy regime¹⁵ which have been suggested in the literature.¹⁶ To date, these proposals have never become practically relevant. We demonstrate how the CRM could change this.

We describe in detail the process of implementing the CRM, based on the current practice of corporate workouts. The endpoint of the development could be a fully automated (AI-driven), comprehensive and private reorganization process/system. However, it is important to understand how restructuring practice can evolve from the status quo to this endpoint. Initially, the CRM will primarily create a virtual environment for familiar processes and provide professional human actors with some new tools for managing a restructuring. The “self-driving corporate workout” is a distant prospect.

Would court-supervised restructurings become unnecessary once a “Corporate Restructuring Machine” is in operation? This is not necessarily the case. Corporate workouts can still fail for various reasons. Corporate debtors or other stakeholders may trust a court-supervised process more than a machine-run restructuring. Not enough stakeholders might sign up

¹⁴ Alan Schwartz, *A Contract Theory Approach to Business Bankruptcy*, 107 YALE L. J. 1807 (1998).

¹⁵ Robert Rasmussen, *Debtor’s Choice: A Menu Approach to Corporate Bankruptcy*, 71 TEX. L. REV. 51 (1992). See also Horst Eidenmüller, *Contracting for a European Insolvency Regime*, 18 EUROPEAN BUSINESS ORGANIZATION LAW REVIEW (EBOR) 273 (2017).

¹⁶ For a critical perspective see Elizabeth Warren and Jay L. Westbrook, *Contracting Out of Bankruptcy: An Empirical Intervention*, 118 HARV. L. REV. 1197 (2005).

for a comprehensive CRM restructuring, at least initially. Processes might not crowd out but rather influence and complement each other, benefitting users. The best private tools could be used in public processes, and private tools emulate accepted public standards.

What seems certain, however, is that the role of human experts/agents in negotiating a corporate workout will change significantly, and there will be fewer of them. Designing, deploying and managing restructuring applications will become an important skill for future restructuring professionals.

The remainder of the article is structured as follows. We discuss the effects of AI applications on negotiations generally in Section II, and the benefits and process fragility of corporate workouts in Section III. In Section IV, we review various AI applications for corporate workouts. The core idea of an open platform approach (“AI Workout”) is introduced in Section V. How corporate restructuring practice could evolve from the status quo towards the potential endpoint of a “Corporate Restructuring Machine” is discussed in Section VI. Concluding remarks follow in Section VII.

II. AI APPLICATIONS FOR NEGOTIATIONS

Corporate workouts involve complex multi-party negotiations. Key stakeholders are the corporate debtor, its shareholders, employees and managers, the debtor’s creditors, and often third parties such as government institutions and agencies, or investors and financiers. Many of these parties are sophisticated repeat-players. They are usually represented by specialist counsel and/or financial consultants or other restructuring professionals. Often, the financial stakes are very high, as are the broader economic consequences of the decisions taken in the workout.

At the heart of corporate reorganizations stands bargaining.¹⁷ Yet bargaining has its own costs and limits. Chief among them are the limits associated with the fact that its humans who do the bargaining. Negative emotions can severely complicate the workout process. So can divergent estimations of what's a "fair" way to divide whatever surplus the parties expect the deal to generate. These limitations do not mean that deals always go unconsummated. They rather suggest that there are efficiencies to be captured, if only we could capture them.

With this in mind, an investigation into the use of AI applications to assist humans in corporate workout negotiations or to automate such negotiations should begin with an examination of the potential of AI applications to improve negotiation processes *in general*.¹⁸ In recent years, many AI applications have come onto the market that have revolutionized our understanding of negotiation processes. At the same time, these applications have an enormous impact on the efficiency of these processes and on how value is distributed amongst the negotiators.

A. The PPP Model of Negotiations

Negotiations are a *process* in which *people* attempt to *solve* a problem. This "PPP Negotiation Model"¹⁹ serves a useful analytical purpose. It allows negotiators to locate what happens in a negotiation on three different levels

¹⁷ See Douglas G. Baird & Robert K. Rasmussen, *Antibankruptcy*, 119 YALE L. J. 648, 699 (2010) ("The lifeblood of corporate reorganizations is and always has been negotiation.").

¹⁸ This section relies heavily on prior work one of us has done in the field of AI and negotiation theory/management: Horst Eidenmueller, *Game Over: Facing the AI Negotiator*, UCLR ONLINE (2024), [Game Over: Facing the AI Negotiator | The University of Chicago Law Review](#) (last visited January 9, 2025); Horst Eidenmueller, *The Advent of the AI Negotiator: Negotiation Dynamics in the Age of Smart Algorithms*, 20 J. BUS. & TECH. L. 1 (2025).

¹⁹ See Horst Eidenmueller and Andreas Hacke, *The PPP Negotiation Model: Problem, People, and Process*, OXFORD BUSINESS LAW BLOG (OBLB), March 17, 2017, [The PPP Negotiation Model: Problem, People, and Process | Oxford Law Blogs](#) (last visited April 26, 2024).

and identify causal effects. Humans differ, and they act differently in similar situations. A solution that A considers fair might be considered unfair by B. And when negative emotions like frustration and anger begin to dominate, it is not necessarily because the other negotiators are simply difficult people. The real cause of negativity could be a dysfunctional process.

The increasing use of digital tools and AI applications to support or even replace human negotiators poses a challenge to the PPP model. Should we start thinking of negotiations as a *process* in which ***machines*** try to solve a *problem*? Should the “PPP Negotiation Model” become the “PMP Negotiation Model”? Even without a (complete) replacement of human negotiators, the impact of AI applications on the problem and process levels of negotiations will be profound.

B. Information and Bargaining Efficiency

Information is a key variable for negotiations in general and negotiation dynamics in particular. Negotiators will want to understand who is involved on the other side of the table, their personalities, interests and concerns, and bargaining histories. They will also want to understand their own and their opponent’s “Best Alternative to a Negotiated Agreement” (BATNA²⁰). Based on this they can assess the existence and size of a “Zone of Possible Agreement” (“ZOPA”) or “Bargaining Range”.²¹

²⁰ The concept of “BATNA” was developed by ROGER FISHER, WILLIAM URY AND BRUCE PATTON, GETTING TO YES: NEGOTIATING AGREEMENT WITHOUT GIVING IN (3rd ed. 2011).

²¹ See, for example, ROBERT MNOOKIN, SCOTT PEPPET AND ANDREW TULUMELLO, BEYOND WINNING: NEGOTIATING TO CREATE VALUE IN DEALS AND DISPUTES 18-21 (2000).

A nuanced understanding of the interests and preferences of the parties is essential to create value in negotiations.²² Do the parties have similar interests, for example in building a business relationship, or in resolving disputes in a certain process? Are there differences between the parties such as, for example, different interests, risk attitudes, time preferences, views of future events (forecasts), or capabilities, which can be exploited to create value?²³

This is where Big Data and new AI applications for negotiations come in. In general, the decisive development progress that AI applications bring with them lies in the intelligent use of all relevant information. They drastically increase the information level of the negotiators on relevant factors such as interests, agreement options, and alternatives to agreement, and they reduce noise²⁴—incomplete or even false and (potentially) misleading information. Overall, transparency regarding relevant negotiation factors will increase significantly.

For example, a large number of AI applications are already in practical use today, making it possible to quantify alternatives to an agreement.²⁵ These applications are based on decision theory concepts and evaluate scenarios using data-based probability assessments. As a

²² On creating value in negotiations see DAVID LAX AND JAMES SEBENIUS, *THE MANAGER AS NEGOTIATOR: BARGAINING FOR COOPERATION AND COMPETITIVE GAIN* Chapter V (1986).

²³ On the relevance of such differences for value creation see STEVEN J. BRAMS AND ALAN D. TAYLOR, *FAIR DIVISION: FROM CAKE-CUTTING TO DISPUTE RESOLUTION* (1996).

²⁴ DANIEL KAHNEMAN, OLIVIER SIBONY & CASS R. SUNSTEIN, *NOISE: A FLAW IN HUMAN JUDGMENT* (2021).

²⁵ See, for example, Kathrin Eidenmueller, Conor McLaughlin and Horst Eidenmueller, *Expanding the Shadow of the Law: Designing Efficient Judicial Dispute Resolution Systems in a Digital World—An Empirical Investigation*, available at [Expanding the Shadow of the Law: Designing Efficient Judicial Dispute Resolution Systems in a Digital World — An Empirical Investigation by Kathrin Eidenmueller, Conor McLaughlin, Horst Eidenmueller :: SSRN](#) (forthcoming in 29 HARV. NEG. L. REV. (2024)) (reporting the results of an empirical study on AI applications which are used in practice to assess non-agreement alternatives in dispute resolution settings).

consequence, the existence and size of a ZOPA in negotiations will become increasingly clear.

Precisely identifying the parties' interests and, in consequence, value-maximizing agreement options is another area in which AI applications have become very useful tools for negotiators in recent years. Analytically, human interests can be derived by applying indirect inference rules which estimate interests from activity.²⁶ With this approach, the interest prediction problem is formulated as a hidden state estimation problem, and a solution is derived through Bayesian inference. Negotiators' personalities more broadly can be analyzed using "AI Profiling".²⁷ Based on a better understanding of the parties' interests, concerns, and preferences, better (value-increasing) deals can be structured.

The AI-induced increased transparency in negotiations has another positive effect on bargaining efficiency. Manipulating your opponent's perceptions of your interests and alternatives used to be a key negotiation tactic. For example, if your negotiation partner wrongly believes that you have a great BATNA, their offer will likely be not lower than this (alleged) benchmark.

With the advent of smart negotiation algorithms, it has become much more difficult for a party to strategically hide or misrepresent their true interests, concerns, preferences, and alternatives. For example, transparency about the BATNAs of the negotiators reduces or even eliminates the possibility to play "mind games" and to manipulate your opponent. Negotiators are confronted with algorithms which profile them,

²⁶ See Tanveer Ahmed and Abhishek Srivastava, *Predicting Human Interest: An Application of Artificial Intelligence and Uncertainty Quantification*, 4 JOURNAL OF UNCERTAINTY ANALYSIS AND APPLICATIONS (2016), available at [Predicting Human Interest: An Application of Artificial Intelligence and Uncertainty Quantification | Journal of Uncertainty Analysis and Applications | Full Text \(springeropen.com\)](#) (last visited May 2, 2024).

²⁷ See Laura Berrill, *Artificial Intelligence and People Profiling*, AI₀ MAGAZINE, June 2, 2021, available at [Artificial Intelligence and People Profiling | AI Magazine](#) (last visited May 2, 2024).

deduce interests from behavioral patterns, adjust their assessments to real-time information derived from verbal communication, body language and other non-verbal cues, and literally might at some point even be able to read their mind. A portable, non-invasive AI system which can decode silent thoughts and turn them into text has already been developed.²⁸ Researchers have also developed a system that can detect if a person is lying or telling the truth, based on facial movements.²⁹

This significantly reduces the scope for deceptive tactics and, as a consequence, brings with it a sizable efficiency benefit. Developing and implementing deceptive tactics and defending against them does not create value. It aims to claim value or to guard against being exploited and triggers a deadweight loss. Reducing this loss is a corollary benefit of smart negotiation algorithms.³⁰

²⁸ See University of Technology Sydney, *Portable, non-invasive, mind-reading AI turns thoughts into text*, December 12, 2023, available at [Portable, non-invasive, mind-reading AI turns thoughts into text | University of Technology Sydney \(uts.edu.au\)](https://www.uts.edu.au/news/portable-non-invasive-mind-reading-ai-turns-thoughts-into-text) (last visited May 3, 2024).

²⁹ See Zizhao Dong, Gang Wang, Shaoyuan Lu, Luyao Dai, Shucheng Huang, Ye Liu, *Intentional Deception-Detection Based on Facial Muscle Movements in an Interactive Social Context*, 164 PATTERN RECOGNITION LETTERS 30 (2022).

³⁰ Of course, if access to smart negotiation algorithms is asymmetric, the better equipped and informed party will have a bargaining advantage. This is supported by an established body of scholarly literature, especially in the economics of incomplete contracting and game theory. Beginning with Drew Fudenberg and David Levine, Klaus Schmidt and others have shown that asymmetric information allows the (better) informed player to capture almost all of the cooperative surplus. This result holds for a large class of games, independent of how the specific interaction is modelled. See Drew Fudenberg and David K. Levine, *Reputation and Equilibrium Selection in Games with a Patient Player*, 57 ECONOMETRICA 759 (1989); Klaus Schmidt, *Commitment through Incomplete Information in a Single Repeated Bargaining Game*, 60 JOURNAL OF ECONOMIC THEORY 114 (1993); Klaus Schmidt, *Reputation and Equilibrium Characterization in Repeated Games with Conflicting Interests*, 61 ECONOMETRICA 325 (1993). For an overview of the literature see GEORGE J. MAILATH AND LARRY SAMUELSON, REPEATED GAMES AND REPUTATIONS: LONG-RUN RELATIONSHIPS (2006).

C. Streamlining Negotiation Processes

These algorithms also bring significant efficiency benefits to the process level of negotiations. Already today, sophisticated negotiators are using a wealth of different AI applications which assist them in planning negotiation processes and conducting them more efficiently.³¹

For example, relevant negotiation topics can be identified by using dynamic topic modelling techniques and so-called topic rivers.³² AI applications assist with discovery/disclosure, due diligence/review of documents (“Technology-Assisted Review”, TAR), document classification/management, document generation, BATNA analysis, and creative option generation.

AI tools do not only help in preparing negotiations. They also have become an important tool for conducting negotiations more efficiently. This goes much beyond negotiating online using platforms such as Zoom³³ and/or case management tools such as OPUS2³⁴ to streamline the negotiation process. It also goes much beyond using chatbots as negotiation advisors. Smart algorithms can be deployed to significantly improve communication and decision-making in negotiations.

An important technology here is “Natural Language Processing” (NLP).³⁵ NLP is the key technology for speech recognition and translation. Sentiment analysis, a subfield of NLP, can be used to extract opinions and

³¹ See Kathrin Eidenmueller et al., *supra* note 25 (reporting the results of an empirical study on AI applications which are used in practice to plan and conduct dispute resolution processes).

³² See Johannes C. Scholtes and Hendrick Jacob van den Herik, *Big Analytics for E-Discovery*, in RESEARCH HANDBOOK ON BIG DATA LAW 253, 268-72 (Roland Vogl ed., 2021).

³³ www.zoom.com (last visited January 16, 2025).

³⁴ www.opus2.com (last visited May 2, 2024).

³⁵ See, for example, RAYMOND S. T. LEE, NATURAL LANGUAGE PROCESSING: A TEXTBOOK WITH PYTHON IMPLEMENTATION (2023).

sentiments from text.³⁶ Rather sooner than later, negotiators from different jurisdictions will communicate with each other in different languages in real-time, assisted by speech recognition and translation algorithms. Other algorithms help to improve wording and communication style more generally.³⁷ AI-powered automated transcripts of the negotiations will be available instantly.³⁸

AI-assisted negotiators will implement negotiation strategies conceptualized away from the table and dynamically adjusted on the basis of new information which becomes available during the negotiation. These negotiation strategies, even if very complex, will be executed with great precision.

The consequences for negotiation processes will be profound. First, the transaction costs of negotiations will fall sharply. Negotiation processes become much more transparent and rule-based and offer an improved framework for better results. It will be clearer to negotiators what exactly is happening and why. Negotiators will communicate more productively. This will make the negotiations run much more smoothly and quickly than is currently the case. Significantly lower transaction costs lead to higher net value creation in negotiations.

Second, and related to the first point, the use of smart algorithms will de-emotionalize negotiations. This will have an overall positive impact on negotiation processes and their costs. Of course, emotions are not always negative. Positive emotions such as excitement, joy, enthusiasm or compassion can have a significantly positive influence on negotiation processes.³⁹ At the same time, the reality of most dispute resolution

³⁶ See James Yoon, *Artificial intelligence and the zealous litigator*, in RESEARCH HANDBOOK ON BIG DATA LAW 389, 398 (Roland Vogl ed. 2021).

³⁷ See, for example, SwayBeta.ai ([SwayBeta.ai](https://swaybeta.ai)) (last visited January 29, 2025).

³⁸ See, for example, www.otter.ai (last visited May 3, 2024).

³⁹ Such positive emotions are triggered if negotiators respect and address “core concerns” of each other. See ROGER FISHER AND DANIEL SHAPIRO, BEYOND REASON: USING EMOTIONS AS YOU NEGOTIATE (2005).

negotiations is very different: fear, anger, and frustration usually dominate the negotiators' minds. And even when negotiating deals, most people would feel a bit tense and anxious most of the time. Few take serious pleasure in negotiating deals.

Once negative emotions begin to cloud the negotiators' minds, the process is in trouble. Negotiators are blinded by their negative emotions, they make mistakes, they overreact and escalate. In comparison, machines stay cool (aside from heated batteries).

D. Replacing Human Negotiators

So far, we have assumed that human negotiators will be assisted by AI tools. The benefits of the "AI revolution" might be even greater if and to the extent that negotiations become fully automated, replacing human negotiators.

This is not science fiction. In November 2023, the British company Luminance⁴⁰ demonstrated how its LLM "Autopilot" completely automated the negotiation of a Non-Disclosure Agreement (NDA), without human intervention, between two opposing parties.⁴¹ Even more impressively, in 2022, Walmart International started to use a chatbot developed by California-based firm Pactum⁴² to automate (re-)negotiations of 89 of Walmart's more than 100,000 contracts with suppliers.⁴³ The chatbot

⁴⁰ www.luminance.com (last visited April 30, 2024).

⁴¹ See the statement on the company website: [Luminance Showcases World's First Completely AI-Powered Contract Negotiation](#) (last visited April 30, 2024). See also Ryan Browne, *An AI just negotiated a contract for the first time ever—and no human was involved*, CNBC November 7, 2023, available at [AI negotiates legal contract without humans involved for first time \(cnbc.com\)](#) (last visited April 30, 2024).

⁴² www.pactum.com (last visited April 30, 2024).

⁴³ See Remko Van Hoek, Michael DeWitt, Mary Lacity, Travis Johnson, *How Walmart Automated Supplier Negotiations*, HARVARD BUSINESS REVIEW, November 8, 2022, available at [How Walmart Automated Supplier Negotiations \(hbr.org\)](#) (last visited April 30, 2024). See also Daniela Sirtori and Brendan Case, *Walmart is*

reached an agreement with 64% of the participating suppliers. Walmart reports limited cost savings (on average 1.5% on the spend negotiated) and an extension of payment terms to an average of 35 days.

The algorithm was programmed to target payment schedules, seeking to negotiate early payment discounts or extended payment terms without discounts. In exchange, suppliers were offered the option of changing Walmart's right to terminate contracts immediately without cause to providing a 30-, 60-, or 90-day written termination notice. Walmart also selectively offered suppliers opportunities for growth in assortment and sales volume in exchange for price discounts. Crucially, the different agreement options were used to build "structured scripts" to guide suppliers through the negotiation process.

Compared to Luminance's Autopilot, the Pactum chatbot appears to leave at least a little bit of room for value creation. The negotiation about discounts is of course a purely zero-sum game. But trading certain discounts for different types of termination rights is a form of value creating logrolling. Suppliers can "buy" different forms of protection against immediate contract termination in exchange for different prices, i.e., discounts. However, this trading is scripted in the sense that only a strictly limited set of agreement options is negotiable.

An assessment of these first practical automations of negotiation processes leads to the following findings. First, algorithms are currently deployed to achieve clearly defined distributive goals in simple negotiation settings (two parties, one issue). They are not deployed to automate the creation of value through creative solutions in complex multi-party, multi-issue negotiations. Second, the main users of these algorithms are large businesses such as Walmart. Such businesses can afford to make upfront investments in the development and/or purchase of specialized algorithms

Using AI to Negotiate the Best Price with Some Vendors, BLOOMBERG, April 26, 2023, available at <https://www.bloomberg.com/news/articles/2023-04-26/walmart-uses-pactum-ai-tools-to-handle-vendor-negotiations> (last visited May 1, 2024).

because they can deploy them at scale, reaping the significant (cost) advantages associated with such deployment. Furthermore, large businesses have access to a huge pool of relevant data internally to train custom machine learning algorithms.⁴⁴ They are also able to recruit and retain the specialists required to develop and deploy such algorithms.⁴⁵

At the same time, it is clear that technological development is currently progressing rapidly. It will not be long before AI applications can automate even complex negotiations with great potential for creating value and saving transactions costs. The expected efficiency gains are very high. In “automated negotiations”, the machine replaces the human negotiator, so “Humans Need Not Apply”, to quote the title of a book about the economic impact of intelligent machines.⁴⁶ In “AI-assisted negotiations”, the human negotiator increasingly becomes the operator and supervisor of intelligent machines. It is clear that this requires different skills than those that were sufficient before the advent of Big Data and AI.

III. BENEFITS AND PROCESS FRAGILITY OF CORPORATE WORKOUTS

Against this background, there could be enormous potential for AI to improve out-of-court restructurings of corporations, as we will show in this section. Out-of-court restructurings or “corporate workouts” are usually complex multi-issue, multi-party negotiations. The potential to create value by avoiding formal bankruptcy proceedings is great, but corporate workouts suffer from “process fragility”.

⁴⁴ See John Armour and Horst Eidenmueller, *Self-Driving Corporations?*, 10 HARV. BUS. L. REV. 86, 98-99 (2020).

⁴⁵ See John Armour, Richard Parnham and Mari Sako, *Augmented Lawyering*, UNIVERSITY OF ILLINOIS L. REV. 71, 108-109, 112-113 (2022).

⁴⁶ JERRY KAPLAN, HUMANS NEED NOT APPLY: A GUIDE TO WEALTH AND WORK IN THE AGE OF ARTIFICIAL INTELLIGENCE (2015).

A. Reasons for Corporate Workouts

Corporate workouts are attempted by stakeholders to save direct and indirect bankruptcy costs⁴⁷ and/or to obtain a more favorable position than in a court-supervised bankruptcy proceeding. Direct bankruptcy costs comprise the costs of managing the bankruptcy process, such as court or lawyers' fees. Indirect costs include consequential costs of bankruptcy that are more difficult to measure, such as the loss in firm value caused by the event of bankruptcy and the bankruptcy process. Indirect costs in particular can be very high. Depending on the type of firm, the bankruptcy process and its duration, empirical studies have identified indirect bankruptcy costs of 2-20 percent of pre-bankruptcy firm value.⁴⁸ For a large public corporation, this can mean billions of dollars. Hence, the incentive to save some of these costs by attempting a corporate workout is very strong.

Strong incentives often also exist to obtain a more favorable financial position in a workout than in a court-supervised bankruptcy proceeding. For example, shareholder loans are subordinated in the bankruptcy proceedings of many jurisdictions.⁴⁹ In a successful corporate workout, such loans can be treated differently. The financial benefit for an affected shareholder can be significant. Just think of downstream financing of an insolvent subsidiary by a parent company in a corporate group setting.

⁴⁷ On different types of bankruptcy costs see, generally, Stephen J. Lubben, *The costs of corporate bankruptcy: how little we know*, in Research Handbook on Corporate Bankruptcy Law 275, 276 (Barry E. Adler ed. 2020).

⁴⁸ See Lemma W. Senbet and Tracy Yue Wang, *Corporate Financial Distress and Bankruptcy: A Survey*, 11 January 2013, 29-32, available at [Corporate Financial Distress and Bankruptcy: A Survey by Lemma W. Senbet, Tracy Yue Wang :: SSRN](#) (last visited January 28, 2025) (surveying various empirical studies of indirect bankruptcy costs).

⁴⁹ See Horst Eidenmueller, *Comparative Corporate Insolvency Law, Second Edition*, available at [Comparative Corporate Insolvency Law, Second Edition by Horst Eidenmueller :: SSRN](#) (last visited January 28, 2025) (discussing rules on the subordination of shareholder loans and rationales for such rules). See also Martin Gelter, *The Subordination of Shareholder Loans in Bankruptcy*, 26 INTERNATIONAL REVIEW OF LAW AND ECONOMICS 478 (2006).

B. Process Fragility of Corporate Workouts

Corporate workouts typically involve complex multi-party negotiations between many stakeholders with very different interests, such as: different types of creditors, shareholders, banks and funds, employees, and government authorities. There usually is significant heterogeneity within each stakeholder group. Just think of small suppliers on the one hand and a consortium of large, syndicated lenders on the other. The composition of the relevant stakeholders changes frequently. Claims trading is a common feature in financial distress scenarios.⁵⁰ Information asymmetries are omnipresent.

Against this background, successfully negotiating a corporate workout is a major challenge. The parties cannot rely on statutory procedures. They must establish the process ad hoc, which involves significant transaction costs and uncertainty. Stakeholders have a strategic incentive to freeride on the restructuring contributions of others, destabilizing the workout.⁵¹ This so-called holdout problem is a massive test for corporate workouts. Parties engage in rent seeking to improve their personal financial position in the workout, causing deadweight losses. As a consequence, corporate workouts are inherently fragile.

This inherent “process fragility” of corporate workouts follows from their governance mode: it is contractual and based on voluntary cooperation. Parties, especially creditors, can, to a certain extent, reduce this fragility. For example, most countries afford parties flexibility in choosing a qualifying majority that may amend the core payment terms of a bond issue⁵² or a syndicated loan. Parties conclude “restructuring support agreements” (RSAs)

⁵⁰ See, for example, Jared Elias, *Bankruptcy Claims Trading*, 15 JOURNAL OF EMPIRICAL LEGAL STUDIES 772 (2018).

⁵¹ See Eidenmueller, *supra* note 9.

⁵² The U.S. is an exception; Sec. 316(b) of the Trust Indenture Act prohibits such collective action clauses.

which commit them to support certain restructuring plans under specified circumstances.⁵³ Often, they even agree on such a plan in an out-of-court setting and initiate the bankruptcy process only to achieve its judicial confirmation (“pre-packaged bankruptcy”).⁵⁴

These efforts are costly, and they do not conclusively solve the problems of corporate workouts. For example, *ex ante* contractual arrangements between creditors to facilitate restructurings are feasible only within a specific debt instrument such as a bond or syndicated loan. They cannot secure coordination between different types or groups of creditors. RSAs stabilize coordination only between voluntarily cooperating stakeholders. Holdouts who refuse to participate cannot be forced to do so.

These same considerations currently limit when parties can practically engage in a corporate workout. Corporate reorganizations, whether in-court or out-of-court, affect many stakeholders that are spread all over the globe. Corraling them to all engage in a workout would be a massive undertaking. As a result, workouts are largely reserved for cases where a company remains on fairly good terms with many of its stakeholders (such as trade creditors and customers), and yet faces a significant liquidity shortage. Under those circumstances, the only stakeholders the company would need to consult would be its shareholders and lenders. Though that can still be challenging for the company to do, it is significantly more manageable than the counterfactual alternative of the company having to contact literally all of its stakeholders in order to consummate a workout.

⁵³ See, for example, Katherine Waldock, Anthony Casey & Frederick Tung, *Restructuring Support Agreements: An Empirical Analysis*, available at [Restructuring Support Agreements: An Empirical Analysis by Katherine Waldock, Anthony Casey, Frederick Tung :: SSRN](#) (last visited January 28, 2025).

⁵⁴ See, for example, John J. McConnell and Henri Servaes, *The Economics of Prepackaged Bankruptcy*, 4.2 JOURNAL OF APPLIED CORPORATE FINANCE 93 (1991).

C. Stabilizing Corporate Workouts

Corporate restructuring practice has long developed legal and practical tools to address these and other challenges faced by corporate workouts. In the 1980s and 1990s, for example, the so-called “London Approach” was developed and used in the City of London. This was a set of principles that commercial banks followed when negotiating a corporate workout, and was monitored and mediated by the Bank of England.⁵⁵ It has been described as a kind of “constitutional contract” for corporate workouts.⁵⁶

Modelled on the London Approach, the “International Association of Restructuring, Insolvency, and Bankruptcy Professionals” (INSOL) published “Principles for a Global Approach to Multi-Creditor Workouts” in 2000.⁵⁷ The idea was to take the London Approach to the global stage. Key INSOL Principles include the desirability of a standstill period (under certain circumstances, 1st INSOL Principle), the establishment of coordination committees (4th INSOL Principle), or the provision of relevant information by the debtor and its dissemination amongst creditors (5th INSOL Principle).

However, in the new millennium the London Approach and the INSOL Principles gradually fell into obscurity. Corporate debt had become much more fragmented and heterogenous. Claims trading was now a common occurrence. Against this backdrop, inviting a handful of commercial bankers to a cup of tea with the Governor of the Bank of England was no

⁵⁵ See, for example, Eidenmueller, *supra* note 9, at 236-244; John Armour and Simon Deakin, *Norms in Private Bankruptcy: The ‘London Approach’ to the Resolution of Financial Distress*, 1 J. OF CORP. LAW STUDIES 21 (2001).

⁵⁶ See Eidenmueller, *supra* note 9, at 236-237.

⁵⁷ See INTERNATIONAL ASSOCIATION OF RESTRUCTURING, INSOLVENCY, AND BANKRUPTCY PROFESSIONALS, PRINCIPLES FOR A GLOBAL APPROACH TO MULTI-CREDITOR WORKOUTS II (2000, 2017), [Statement of Principles II](#) (last visited January 8, 2025).

longer a sensible way of supporting a corporate workout. The “workout game” had changed fundamentally.

Things are no different in the American context. There, companies frequently finance themselves with loans that are fractionalized and traded in secondary markets. This in turn means that the creditors who possess these loan fragments face coordination and information challenges when a company seeks to restructure.⁵⁸

Scholars have attempted to fill this void by suggesting that legislatures should consider developing “creditor cooperation duties” to stabilize corporate workouts.⁵⁹ Such duties would replicate the contours of a hypothetical inter-creditor agreement among all creditors and, at a minimum, would require them to negotiate a restructuring plan in good faith. Experience shows that merely being forced to engage with other stakeholders and provide reasons for one’s bargaining position has a cooperation-enhancing effect.

Under certain conditions, cooperation duties might also force creditors to agree to a proposed workout arrangement. Assuming the plan would have a Pareto-efficient outcome comparable to a (hypothetical) bankruptcy process and would respect the ranking of claims under such a process, non-participation of a creditor should not be allowed. A creditor who torpedoed an efficient workout plan for unreasonable gain would risk liability if the debt-rescheduling effort collapsed and the firm was forced to file for bankruptcy. This proposal, however, has not yet been taken up by policymakers.

Instead, more recently, so-called “Liability Management Exercises” have received a lot of attention in the United States and beyond. In essence,

⁵⁸ See Jared A. Ellias & Elisabeth de Fontenay, *Law and Courts in an Age of Debt*, 171 U. PA. L. REV. 2025, 2051 (2023).

⁵⁹ See Horst Eidenmueller & Kristin van Zwieten, *The Case for Creditor Cooperation Duties in Corporate Workouts*, The CLS Blue Sky Blog, May 13, 2020, available at [The Case for Creditor Cooperation Duties in Corporate Workouts | CLS Blue Sky Blog](#) (last visited January 28, 2025).

these are transactions which seek to leverage “flexibility” within existing debt structures to create refinancings and unlock fresh capital.⁶⁰ Critics argue that “Liability Management Exercises” is an euphemism. They speak of lender-on-lender “violence” instead. It is argued that sophisticated lenders “... can change the rules of the road to take the lion’s share of any debt recovery for themselves, leaving the minority out in the cold.”⁶¹ It appears that achieving coordination may come at the price of secrecy, selectivity and gross unfairness in these “exercises.” They are certainly not inclusive undertakings.

In summary, corporate workouts remain fragile. They are characterised by significant strategic uncertainty, stark information asymmetries, sharp value claiming tactics, and backroom dealings. Success is far from guaranteed, and a successful workout will benefit some but not necessarily all stakeholders. The potential to increase information transparency, support decision-making, stabilize the negotiation process and reduce transaction costs with AI tools seems great. This is the theme to which we now turn.

IV. AI APPLICATIONS FOR CORPORATE WORKOUTS

As discussed in Section II above, AI applications are already changing the concept of a “negotiation” and negotiation practice in general. They help increase the transparency of key negotiation factors, streamline negotiation processes and improve negotiators’ decision-making, resulting in higher net value creation compared to “traditional” negotiations. In fact, simple commercial negotiations have already been fully automated.

⁶⁰ For an overview see, for example, ALIXPARTNERS, LIABILITY MANAGEMENT: SECURING STABILITY WITH A TURNAROUND MINDSET, October 2024, [Deep-dive: Liability Management Exercises - Lexology](#) (last visited December 20, 2024).

⁶¹ Anant Kumar, *Public insights on private credit: Barbarians inside the syndicated loan gates*, ALTERNATIVES BY FRANKLIN TEMPLETON, July 15, 2024, [Public Insights on Private Credit: Barbarians inside the syndicated loan gates | Franklin Templeton](#) (last visited December 20, 2024).

But specific AI applications have also been developed and are being used to assist negotiations and decision-making in corporate bankruptcy and workout settings or at least in similar multi-party and multi-issue negotiations. In the following, we will provide an overview of some relevant applications before introducing our core idea of an open platform approach (“AI Workout”) in Section V. It is appropriate to distinguish between the problem level of a corporate workout and the process level.

A. Problem Level: Better Decision-Making

Corporate financial distress, bankruptcy, and a workout entail important business decisions. Many of these decisions relate to valuation issues. How likely is financial distress in the sense that the company’s assets are worth less than its liabilities (balance sheet insolvency), or that it is not able to pay its debts as they fall due (cash flow insolvency)? Is the firm worth more as a going concern than if it were liquidated? Which (new) capital structure would maximize the economic value of the firm?

AI applications can help make better (re)financing, valuation, and restructuring decisions in a corporate workout context. The aim is to improve the information level of negotiators and to rationalize their decision-making. At the same time, increased transparency and information levels reduce the scope for costly value-claiming tactics such as deception or other forms of manipulation.

For example, a lot of work is currently undertaken on financial distress or bankruptcy prediction models.⁶² These models leverage open-

⁶² See, for example, Apostolos Dasilas and Anna Rigani, *Machine learning techniques in bankruptcy prediction: A systematic literature review*, 255 EXPERT SYSTEMS WITH APPLICATIONS 124761 (2024) (reviewing 207 empirical studies on bankruptcy prediction); Kaoutar El Madou, Said Marso, Moad El Kharrim & Mohamed El Merrouani, *Evolutions in machine learning technology for financial distress prediction: A comprehensive review and comparative analysis*, 41(2) EXPERT SYSTEMS (February 2024), 30 October 2023, available at <https://doi.org/10.1111/exsy.13485> (last visited January 30, 2025).

source software libraries such as XGBoost (eXtreme Gradient Boosting), or machine learning algorithms such as Random Forest or SVM (support vector machines). Common predictive variables include liquidity ratios, profitability (e.g. return on assets), cash flow, leverage, and company size. The models consistently outperform traditional methods, achieving higher predictive accuracies.⁶³ Consequently, these applications help price loans more accurately, thereby reducing adverse selection problems.⁶⁴

A related issue is financial distress detection. Models which aim to flag that financial distress is imminent help trigger restructurings timely, reducing agency costs of debt.⁶⁵ One such model (“CovenantAI”) tracks SEC-reported covenant violations with improved accuracy over existing text-search methods, covering data from 1996 to 2022.⁶⁶

In a workout scenario, the value of creditors’ claims in a (hypothetical) bankruptcy process must be assessed as accurately as possible. It determines their bargaining endowment (reservation price) in workout negotiations. The value of a claims depends on the value of the firm, but also on how the legal merits of the claim are assessed. Hence, predicting the (hypothetical) decisions of bankruptcy courts is another important field for AI applications.⁶⁷ These models belong to a broader category of models and

⁶³ See Manel Hamdi, Sami Mestiri & Adnène Arbi, *Artificial Intelligence Techniques for Bankruptcy Prediction of Tunisian Companies: An Application of Machine Learning and Deep Learning-Based Models*, 17 J. RISK FINANCIAL MANAG. 132 (2024).

⁶⁴ See George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 THE QUARTERLY JOURNAL OF ECONOMICS 488 (1970).

⁶⁵ On agency costs of debt see, for example, REINIER KRAAKMAN ET AL., THE ANATOMY OF CORPORATE LAW 110-119 (3rd ed. 2017).

⁶⁶ See Vanessa Krockenberger, Anthony Saunders, Sascha Steffen & Paulina Verhoff, *CovenantAI – New Insights Into Covenant Violations*, February 15, 2024, available at [CovenantAI - New Insights into Covenant Violations by Vanessa Krockenberger, Anthony Saunders, Sascha Steffen, Paulina Verhoff :: SSRN](#) (last visited January 29, 2025).

⁶⁷ See Felix Steffek, *A Story of Two Holy Grails: How Artificial Intelligence Will Change the Design and Use of Corporate Insolvency Law*, UCLR ONLINE, available at [A Story of Two Holy Grails: How Artificial Intelligence Will Change the Design](#)

applications which seek to predict court decisions and litigation risk.⁶⁸ Other models help with more formal aspects of claims verification.⁶⁹

Finally, another important decision creditors have to make in a corporate workout is on the design of a restructuring plan. For this purpose, modelling different scenarios of the distressed company's post-bankruptcy performance under different plans is crucially important. AI applications can predict post-bankruptcy performance of firms in different scenarios.⁷⁰ Other models help ensure that restructuring plans comply with relevant laws and regulations, reducing the risk of legal challenges.⁷¹ The results of these models can inform the plan design process. Predicting post-bankruptcy performance is similar to financial distress or bankruptcy prediction mentioned above.

The models and applications discussed in this section will significantly improve decision-making of key stakeholders in corporate workouts. At the same time, it is crucial to appreciate their limits. Most predictions focus on flagged financial outcomes, but lack integration into complete restructuring workflows, logistical support, or interactive decision-making. Hence, embedding specific AI problem-solving applications in broader process management applications is crucial.

[and Use of Corporate Insolvency Law | The University of Chicago Law Review](#) (last visited January 29, 2025).

⁶⁸ See, for example, Arbilex ([ArbiLex](#)), Lex Machina ([Legal Analytics by Lex Machina](#)), or Solomonic ([Solomonic](#)) (last visited January 29, 2025).

⁶⁹ See, for example, David A. Castleman and Robert Klamser, *The Evolution of Claims Administration Technology in Bankruptcy and Receiverships*, JOURNAL OF CORPORATE RENEWAL 18 (2024), available at [The-Evolution-Of-Claims-Administration-Technology-In-Bankruptcy-Receiverships-1.pdf](#) (last visited February 11, 2024).

⁷⁰ See, for example, Wolfgang Breuer, Andreas Knetsch & Katharina Mersmann, *Dictionaries for Post-bankruptcy Success Prediction: A Machine Learning Approach*, October 31, 2024, available at [Dictionaries for Post-bankruptcy Success Prediction: A Machine Learning Approach by Wolfgang Breuer, Andreas Knetsch, Katharina Mersmann :: SSRN](#) (last visited January 29, 2025).

⁷¹ See, for example, [_____].

B. Process Level: More Efficient Negotiations

We have discussed various AI applications to improve negotiation processes generally already in Section II C above. These extend from scheduling/planning applications to the modelling of negotiation topics, creativity boosters, sentiment analysis, communication moderation, and transcription services. To the best of our knowledge, no specific AI process management tool for corporate workout negotiations currently exists.⁷²

But recently, Google DeepMind has developed the “Habermas Machine”.⁷³ This is an AI-driven mediation tool designed to foster consensus in group discussions by integrating diverse viewpoints.⁷⁴ DeepMind trained a large language model to serve as an AI mediator. The AI mediator engaged in “shuttle diplomacy” (caucus mediation) between groups, helping them to identify common ground while discussing divisive political issues. It appears that the “Habermas Machine” produced more palatable statements that generated wide agreement and left groups less divided than human mediators.

The approach will remind mediators and scholars of mediation of the “One-Text Procedure”.⁷⁵ This is a method which aims to build consensus between conflicting parties on the basis of a single text. The mediator

⁷² But see Legaltechtalk, *Stretto Introduces First Gen AI Platform Designed for Corporate Bankruptcy Cases*, January 10, 2025, available at [Stretto Introduces First Gen AI Platform Designed For Corporate Bankruptcy Cases - LegalTechTalk](#) (last visited February 11, 2025) (discussing “Stretto Conductor”, a new AI-powered platform designed specifically for bankruptcy case management and communications).

⁷³ See Michael Henry Tessler et al., *AI can help humans find common ground in democratic deliberation*, 386 *Science* (18 October 2024), available at [AI can help humans find common ground in democratic deliberation | Science](#) (last visited January 29, 2025).

⁷⁴ See elymc, *DeepMind’s Habermas Machine*, PERPLEXITY, October 26, 2024, available at [DeepMind’s Habermas Machine](#) (last visited January 29, 2025).

⁷⁵ The “One-Text Procedure” was developed by ROGER FISHER AND WILLIAM URY, *GETTING TO YES: NEGOTIATING AGREEMENT WITHOUT GIVING IN* 118-122 (1981). See also CHRISTIAN DUVE, HORST EIDENMUELLER, ANDREAS HACKE, AND MARTIN FRIES, *MEDIATION IN DER WIRTSCHAFT* 244-246 (4th ed. 2025).

proposes a draft compromise text and asks the negotiating parties for feedback. The text is refined in iterative feedback rounds until the mediator concludes that he can no longer improve it.

Other providers offer AI-powered mediation services that go beyond creating a single negotiation text based on the parties' initial statements. "TheMediator.AI"⁷⁶, for example, integrates a round of critical questions to the disputing parties in confidential private conversations into the process before a mediator proposal is developed.

The potential of the "Habermas Machine" or more advanced applications to improve corporate workout processes through a mediated "One-Text Procedure" is obvious. Controversial discussions about a restructuring plan were highlighted decades ago as an excellent use case for this approach.⁷⁷ Mediation has steadily become more important in US Chapter 11 cases,⁷⁸ and it is used as a consensus-building tool in corporate workouts, too.⁷⁹ The technical tools are now available to make mediators' consensus-building efforts much more effective in these situations.

In summary, various AI tools are now available to support decision-making in a corporate workout setting and to streamline the workout negotiations. These tools are waiting to be integrated into a broader business model that provides a technological platform to manage the restructuring process: the "AI Workout".

⁷⁶ [AI Mediation: Settle Disputes. Resolve Conflicts at your fingertips - AI Mediator](#) (last visited February 10, 2025).

⁷⁷ See Eidenmueller, *supra* note 9, at 521-523, 530-531.

⁷⁸ See, for example, Natasha Labovitz and Erica Weisgerber, *The rise of mediation in US Chapter 11 restructurings*, GLOBAL RESTRUCTURING REVIEW, 15 November 2024, available at [The rise of mediation in US Chapter 11 restructurings - Global Restructuring Review](#) (last visited January 29, 2025).

⁷⁹ See Eidenmueller, *supra* note 9, at 529-536. See also Horst Eidenmueller and David Griffiths, *Mediation in Cross Border Insolvency Procedures*, GLOBAL FORENSICS, October 2008, 10-11, November/December 2008, 10-11; Akshaya Kamalnath, *The future of corporate insolvency law: A review of technology and AI-powered changes*, 33 INT. INSOLV. REV. 40, 48-50 (2024).

V. “AI WORKOUT”: AN OPEN PLATFORM APPROACH

In this section, we introduce the core idea of this article. This is the creation of a private, online and open platform, designed to support or even automate corporate workouts, using AI tools and services. We call this the “Corporate Restructuring Machine” (CRM). Stakeholders, particularly creditors and shareholders, could join the platform and opt into AI applications at different times, for different services, and at different prices.

We also demonstrate how old and new contractual solutions to financial distress could be effectively implemented with the CRM. This includes the “London Approach” and the INSOL Principles discussed above. These instruments could be revived with the CRM. It also includes various proposals for concluding bankruptcy contracts or for choosing the applicable bankruptcy regime, which have been suggested in the literature.⁸⁰ To date, these proposals have never become practically relevant. We demonstrate how the CRM could change this.

A. The Contours of the Corporate Restructuring Machine

We envisage the “Corporate Restructuring Machine” (CRM) as a private, online and open platform, designed to support or even automate corporate workouts, using AI tools and services. By “online platform” we mean a digital service that enables interactions between two or more sets of users who use the service to communicate via the internet.⁸¹ This definition of “online platform” comprises marketplaces, social networks, or app stores,

⁸⁰ See Section V B *infra*.

⁸¹ This definition is broadly in line with the definition in Article 3 (i) of the EU Digital Services Act. In this provision, “online platform” is defined to be a “hosting service that, at the request of a recipient of the service, stores and disseminates information to the public” (Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC (Digital Services Act), Official Journal of the European Union, 27 October 2022, L 277).

for example. In the case of the CRM, the platform's business would be to facilitate corporate workouts with AI tools and services.

The platform would be “open” in the sense that it could be used by providers and users of such tools and services on a “free-to-join basis”. As with other open platforms such as Amazon, suppliers would pay fees to the platform operator. Offerings could support the restructuring process, for example, with mediation or arbitration services. Other offerings would assist on the problem level of the workout, for example, with applications for better decision-making.⁸²

Think of the CRM as a kind of “restructuring gym.” The platform operator offers its own “devices” (tools and services) and enables other providers to also market their tools and services. Users could purchase or subscribe to individual offers. They could also join the platform on a “just take a look” basis to see what is on offer, at what prices, and to connect with other subscribers.

Subscriptions could be personal (different forms of “membership”) or transaction-based. In the latter case, the transaction would stipulate that certain issues—for example, the pricing of a financial instrument—would be governed by designated AI applications on the platform.

Already in their charter, corporations could select the CRM or specific applications on the platform as governing mechanisms for specific issues with transaction partners.⁸³ In this case, the personal membership of the corporation would manifest itself in a transaction-based governance as soon as it concludes specific transactions with individual creditors.

Subscriptions could be made at any time. For example, certain CRM applications could be specified as governance mechanisms when the corporation concludes a contract. However, the contract could also be subjected to such mechanisms later by mutual agreement of the parties.

⁸² We have more to say on the offerings on the platform in Section D *infra*.

⁸³ See Section V B *infra*.

The platform would be a private venture. Corporate workouts are a private undertaking. It is the stakeholders of a private corporation who attempt to negotiate a restructuring out of court. As already mentioned, the key governance mode of corporate workouts is private contracting. Hence, it would seem odd to conceptualize the CRM as a public venture, funded and operated by the state. On the other hand, public support or sponsorship should not be excluded. Private best practices can have a feedback effect on public processes and vice versa.

B. The Corporate Restructuring Machine and Bankruptcy Contracting

Certain features of the CRM and its functionality deserve further consideration and elaboration. One of them is its potential to revitalize various old and also to support newer proposals for a contractual or quasi-contractual⁸⁴ resolution of financial distress.

In Section III C, we discussed the “London Approach” to corporate workouts and the INSOL “Principles for a Global Approach to Multi-Creditor Workouts”. These soft law instruments for stabilizing corporate workouts have fallen into oblivion because they do not work in today’s world of out-of-court restructurings. This world is characterized by a highly fragmented and constantly changing creditor community with heterogenous interests.

The London Approach and the INSOL Principles could be revived with the CRM. As a private online platform, the CRM would operate like any other business based on a set of “General Terms and Conditions” (GTCs). These would reflect the goal function of the platform—i.e., its “mission statement”—and key operating principles.

This is where the London Approach and the INSOL Principles could come in. The INSOL Principles must be updated for the digital/AI age. In updated form, they could become part of the operating conditions of the

⁸⁴ We explain below what we mean by “quasi-contractual” in this context.

CRM. When doing business on the platform, suppliers of AI tools and services and users (subscribers) would have to accept these operating conditions as normative framework for their transactions on the platform.

Of course, the conditions will have a certain impact on the attractiveness of the offerings on the platform. But their specific design (soft law vs. hard law, principles vs. rules, etc.) can reflect this fact, so that the conditions appear more inviting than intimidating. The London Approach and the INSOL Principles did not become irrelevant because they were too strict or contained nonsensical requirements. They were simply no longer able to deal with the new realities of corporate workouts.

Another type of contractual or quasi-contractual approach to the resolution of financial distress that could be revived with the CRM is “bankruptcy contracts”, or allowing firms to choose the applicable bankruptcy regime in their charter.

In the 1990s, Alan Schwartz has proposed a contract theory approach to business bankruptcy.⁸⁵ Under this approach, states should permit parties to contract with lenders for the bankruptcy system they prefer. Similarly, Robert Rasmussen suggested a “menu approach to corporate bankruptcy”.⁸⁶ Under this approach, lawmakers would create a menu bankruptcy system, and firms upon formation would be required to select one of the alternatives from the menu, thereby specifying the firm’s available bankruptcy option. This approach is quasi-contractual in the sense that firms and lenders would be bound by the choice made by a firm in its charter, without an actual contract having been concluded.

These approaches could also be revived with the CRM. When concluding contracts with lenders, firms could stipulate that the contract

⁸⁵ Alan Schwartz, *A Contract Theory Approach to Business Bankruptcy*, 107 YALE L. J. 1807 (1998).

⁸⁶ Robert Rasmussen, *Debtor’s Choice: A Menu Approach to Corporate Bankruptcy*, 71 TEX. L. REV. 51 (1992). See also Horst Eidenmüller, *Contracting for a European Insolvency Regime*, 18 EUROPEAN BUSINESS ORGANIZATION LAW REVIEW (EBOR) 273 (2017).

will be governed by specified applications or mechanisms offered on the platform. They could also select such applications or mechanisms as governing restructuring systems in their charter. Of course, this would only bind creditors who voluntarily interact with the firm. Tort creditors, for example, would not fall into this category. But designating the CRM or specified applications on the platform as distress resolution mechanism for voluntary creditors still could be a very effective way to popularize the CRM.

Finally, and more recently, Anthony Casey and Anthony Niblett have developed the idea of “self-driving contracts”.⁸⁷ These are contracts that use AI and Big Data to “fill their own gaps and interpret their own standards without adjudication”.⁸⁸ The idea is general, but the application to financing contracts is obvious: financing conditions, particularly interest rates, would be continually adjusted as relevant parameters—such as macroeconomic conditions, asset values or business prospects—change. One of the offers available on the platform could be an application to make certain financing contracts self-driving.

C. Pricing and Participation Incentives

Another feature of the CRM that we want to explore further is pricing and incentives for participation. Use of the platform as a provider of tools/services or as a customer would be voluntary. No one would be forced to participate unless they agreed to do so. Users could even be allowed to make their participation contingent on a certain threshold of total participation—measured, for example, by the volume of creditors’ claims—being reached or exceeded. Conversely, no one can force other stakeholders to involve them in using certain tools or services. In other words, no one has a claim to

⁸⁷ Anthony J. Casey and Anthony Niblett, *Self-Driving Contracts*, 43 The Journal of Corporation Law 1 (2017).

⁸⁸ *Ibidem*.

participation. Another thing is joining the CRM unilaterally on a “just see” basis (see Section V A above).

The voluntary nature of participation in the CRM and its offerings means that restructurings on the CRM will, to a certain degree, always be selective. Not all stakeholders will take part, either because they do not want to or because they are not invited.

That is not a significant problem per se. Corporate workouts have always been, to a certain degree, selective. It is generally not necessary for all creditors to participate. If anything, the level of selectivity has actually increased over the last few years in both the US and the UK, for a variety of reasons.⁸⁹ Contract creditors who would like to participate and be included in the restructuring negotiations can protect themselves with appropriate clauses in the underlying transaction.

But not all creditors have the ability or bargaining power to negotiate such protection. Just think of tort creditors or small suppliers of a large public corporation, for example. It is desirable to increase the inclusivity of the CRM and transparency of its operations as much as possible. Higher information levels and transparency are conducive to value creation and cooperation in negotiations, and they reduce the scope for deceptive value claiming tactics.⁹⁰ The (negative) experience with “Liability Management Exercises” in the US⁹¹ confirms this.

Ultimately, the market success (or failure) of the CRM and its offerings will influence the level of inclusivity/selectivity, at least to some degree. The more popular the CRM is, and the better its tools and applications work, the more stakeholders will want to participate and, *ceteris paribus*, the easier it will be to include them in the restructuring effort.

⁸⁹ See, for example, Sarah Paterson and Adrian Walters, *Selective Corporate Restructuring Strategy*, 86 THE MODERN LAW REVIEW 436 (2023).

⁹⁰ See Section II B *supra*.

⁹¹ See Section III C *supra*.

A main factor which will influence the market success of the CRM and its offerings is of course the quality of the products/services, and we have more to say on this when we discuss the process of introducing the CRM in Section VI below. But there are two other relevant factors which we would like to deal with in this section: the pricing scheme of the CRM, and its operating conditions.

The operating conditions of the CRM could be calibrated to incentivize participation and inclusivity. The INSOL Principles clearly need to be updated in this respect. They always talk about “relevant creditors”, about their cooperation (First Principle), and about making relevant information available to them and only them (Fifth Principle). Therefore, selectivity, not inclusivity, is built into the system of the INSOL Principles.

This could and should be changed. Increasing the information level of all creditors and the possibility of creditors’ participation in a particular CRM application could be part of the operating conditions of the CRM. The scope and “rigidity” of this condition (soft law vs. hard law, rules vs. principles, etc.) is of course the responsibility of the platform operator to determine. Public funding or support for the platform⁹² could be made conditional on encouraging or even requiring inclusivity and transparency, at least to some degree.

The other mechanism that could be used to increase participation and inclusivity is pricing. The operator of the CRM collects fees from suppliers and customers for its own offers. Providers charge customers fees, considering the fees they have to pay to the platform operator as costs of doing business.

Setting fees and prices could incentivize early and widespread participation in the CRM and its tools and services. Fees and prices could be lower if the parties join or enroll earlier. The idea is to reward those who increase the likelihood of a workout success by making the first (risky)

⁹² See Section V A *supra*.

moves/contributions towards a cooperative outcome.⁹³ For example, subjecting the pricing of a bond to a CRM application when the bond is issued could trigger lower fees than doing so later in an acute corporate crisis.

Depending on the level of participation/inclusion, discounts could be offered. For example, if all lenders in a syndicated loan, rather than just a select group, are included in a CRM application, the price of the application could be lower.

D. Type of AI Tools and Services

Finally, we would like to elaborate on the offerings on the platform. We discussed current AI applications for corporate workouts in Section IV above. In this section, we will detail how these applications could be integrated into the business model and operations of the CRM.

As already mentioned, the CRM would include offerings to support the corporate workout process, i.e. negotiations between stakeholders, as well as tools to assist with problem-solving and decision-making.

The simplest offer would be to provide a place for meetings, discussions and networking. The relevance of this should not be underestimated. When stakeholders have the opportunity to come together informally and discuss topics relevant to restructuring, this increases transparency and understanding and promotes collaboration. To support such informal exchanges, the CRM could organize conferences, workshops, and networking events, for example.

More focused negotiations on a specific workout case could be supported with communication assistance and moderation tools such as discussed in Sections II C and IV B above. This includes the “Habermas

⁹³ See BARRY NALEBUFF, *SPLIT THE PIE: A RADICAL NEW WAY TO NEGOTIATE* 56-57 (2022) (a negotiator who increases the pie should be compensated for his efforts by the other parties).

Machine” or similar models in particular. Communicating constructively and focused on cooperative problem-solving is key for a successful corporate workout.

These negotiations could be supported with AI tools to improve individual or group decision-making at the problem level of the negotiations. This includes valuation tools—for example for assets or claims—as well as tools for assessing the feasibility of plans and predicting the performance of companies after financial distress has been resolved.

Key tools in this context could be algorithms that provide real-time information and insights into market practices related to specific topics. An often-used argument in commercial negotiations is that a specific proposal “is not market” or does not conform to market standards. Applications which provide real-time information on market practices/standards contribute to rationalizing the discussion about difficult distributive issues in negotiations.⁹⁴ The power of Big Data and machine learning algorithms lies right here.

Process management tools, communication aids and decision-making applications help restructuring negotiators agree on a restructuring plan without third-party intervention. However, achieving this goal will sometimes be impossible without such intervention. The CRM can host the full spectrum of ADR procedures including, in particular, conciliation, mediation, and arbitration.⁹⁵

As a non-binding dispute resolution mechanism, mediation leaves the parties in control of the outcome. Mediations can be conducted effectively

⁹⁴ For an overview of the use of AI applications to improve financial decision-making see Vinayak Pillai, *Integrating AI-Driven Techniques in Big Data Analytics: Enhancing Decision-Making in Financial Markets*, 17 December 2024, available at [Integrating AI-Driven Techniques in Big Data Analytics: Enhancing Decision-Making in Financial Markets by Vinayak Pillai :: SSRN](#) (last visited February 8, 2025).

⁹⁵ For an overview see, for example, CHRISTIAN DUVE, HORST EIDENMUELLER, ANDREAS HACKE AND MARTIN FRIES, *MEDIATION IN DER WIRTSCHAFT: WEGE ZUM PROFESSIONELLEN KONFLIKTMANAGEMENT* (4th ed. 2024).

online, and this format has been progressively used since the COVID-19 pandemic, particularly for efficiency reasons.⁹⁶ Increasingly, human mediators are even assisted or even replaced by AI systems (see Section IV B above).

If parties need a binding dispute resolution process they can resort to online arbitration. Like online mediations, online arbitrations have also become an integral part of the (alternative) dispute resolution landscape since the pandemic.⁹⁷ Technological innovations have significantly increased the efficiency of the arbitration process. One such innovation is “swarm arbitrations” which uses blockchain and crowdsourcing to adjudicate disputes.⁹⁸

Privately adjudicating disputes after they arise is only a second-best solution. Ideally, firms would not have to face financial distress because claims would be automatically adjusted to changing macroeconomic and microeconomic conditions. This can be achieved, for example, with applications which execute automatic write-downs of debt instruments or debt-to-equity conversions under certain conditions.⁹⁹ Such conversions also form the heart of various models proposed decades ago to eliminate the need

⁹⁶ See Bryan Clark and Tania Sourdin, *Necessity the Mother of Invention? International Commercial Mediators’ Views on Online Mediation*, 16 May 2024, available at [Necessity the Mother of Invention? International Commercial Mediators’ Views on Online Mediation by Bryan Clark, Tania Sourdin :: SSRN](#) (last visited February 9, 2025).

⁹⁷ See Kathrin Eidenmueller et al., *supra* note 25 (reporting the results of an empirical study on the popularity of various forms of online dispute resolution mechanisms).

⁹⁸ See, for example, Andreas Hacke, *Micro-Justice and New Law? “Swarm Arbitration” as a Means of Dispute Resolution in Blockchain-Based Smart Contracts*, Oxford Business Law Blog, 29 March 2018, available at [Law and Autonomous Systems Series: Micro-Justice and New Law? “Swarm Arbitration” as a Means of Dispute Resolution in Blockchain-Based Smart Contracts | Oxford Law Blogs](#) (last visited February 9, 2025). A popular provider of this sort of service is Kleros, [Homepage | Kleros](#) (last visited February 9, 2025).

⁹⁹ Such financial instruments have played an important role in the recent Credit Suisse bailout. See, for example, Horst Eidenmueller and Javier Paz Valbuena, *Bailout Blues: The Write-Down of the AT1 Bonds in the Credit Suisse Bailout*, 24 EUROPEAN BUSINESS ORGANIZATION LAW REVIEW 409 (2023).

for a valuation of the distressed company while preserving the priority order of creditors' claims.¹⁰⁰

But automatic write-downs or debt-to-equity conversions are of course a relatively blunt feature, and investors might also be very reluctant to buy debt positions which would be automatically converted into an equity stake if the debtor is financially distressed.¹⁰¹ Technology is progressing rapidly, and “self-driving contracts” which offer more sophisticated and flexible dynamic adaptations for individual financial instruments are on the horizon (see Section V B *supra*).

If such contracts become available, we are still a long way from a comprehensive, AI-driven and dynamic corporate financial architecture—a “self-driving reorganization plan”. To achieve this, the acceptance of CRM offerings would have to be high, and difficult software interfaces would have to be managed successfully. This brings us to the final section of this article.

VI. THE EVOLUTION OF THE CORPORATE RESTRUCTURING MACHINE

Corporate workouts are currently primarily human-created and human-controlled processes. Lawyers in particular play a key role. Technology is used sparingly and fragmented by individual actors. This is

¹⁰⁰ See, in particular, Lucien Bebchuk, *A New Approach to Corporate Reorganization*, 101 HARV. L. REV. 775 (1988); Barry Adler, *Financial and Political Theories of American Corporate Bankruptcy*, 45 STANF. L. REV. 311 (1993). On these proposals see, for example, Eidenmueller, *supra* note 9, at 102-112. See also Michael Anderson Schillig, Christoph Kletzer and Andrei Balcau, *Smart Restructuring Tokens*, 17 January 2024, available at [Smart Restructuring Tokens by Michael Schillig, Christoph Kletzer, Andrei Balcau :: SSRN](#) (last visited February 12, 2025). The authors aim to revive these approaches for tokenized securities. This limits their proposal to a specific asset class. It also shares the shortcomings of the original conversion models, namely the automatic conversion of debt positions into equity positions. See the discussion in the text accompanying footnote 99.

¹⁰¹ One reason for this is the risk of a potential equitable subordination of loans which are not converted in the event of bankruptcy. See Horst Eidenmueller, *Comparative Corporate Insolvency Law*, Second Edition, 7 November 2023, available at [Comparative Corporate Insolvency Law, Second Edition by Horst Eidenmueller :: SSRN](#) (last visited February 12, 2025).

about to change. But how exactly could the current workout practice evolve towards the “Corporate Restructuring Machine”?

As with AI applications in general, we expect competition in the market for corporate restructuring applications. Many different providers will develop and market many different products and services. And more than one open platform like the “Corporate Restructuring Machine” proposed in this article will likely emerge.

These platforms will differ from each other in terms of their goal function and the AI applications they offer. It is unlikely that there will be “creditor-friendly” and “debtor-friendly” platforms. Creditors and debtors are jointly interested in minimising the cost of capital, i.e. in systems that increase efficiency. However, it is likely that there will be differences in the operating conditions of each platform (see Section V B above). And platforms will offer different types of services at different prices.

Platform success will depend on the quality and price of the AI applications offered. So, platform operators will strive to include offerings which appeal to a broad range of stakeholders. An AI application with unique capabilities provides a competitive advantage. Google was not the first to develop a search engine.¹⁰² But its engine proved to be by far the best and most successful.

Bandwagon effects are likely to play a crucial role with respect to applications offered on the platform.¹⁰³ The parties in a corporate workout negotiate in a network—the fate of the distressed company connects them. Once a particular application is widely used, the incentive to subscribe to it becomes stronger and stronger, reaching and crossing a tipping point.

An important factor to consider when designing the CRM’s offerings will be the risk preferences of stakeholders (investors). These are likely to be

¹⁰² See Carl Hendy, *The History of Search Engines*, July 3, 2024, available at [The History of Search Engines - Audits.com](https://www.audits.com/en/the-history-of-search-engines) (last visited February 10, 2025).

¹⁰³ On bandwagon effects see, for example, AVINASH K. DIXIT AND BARRY J. NALEBUFF, *THE ART OF STRATEGY* 277-281 (2008).

different. SMEs and consumers, for example, are typically risk-averse. In contrast, certain professional investors such as distressed debt hedge funds may be risk-seeking participants in restructuring negotiations. The platform's offerings should meet these different preferences.

Risk-averse stakeholders are likely to respond more positively to low-risk applications such as communication or mediation tools. These applications are low-risk because those involved are not subject to binding third-party decision-making, and there is little (if any) uncertainty regarding the functions and operations of these tools. For the platform, a relevant factor in this context is reputational and associated business risks. These are also lower with respect to such low-risk applications.

In contrast, risk-seeking stakeholders may want to subscribe to investment products which promise high yields but carry significant downside risks, such as AI-driven automatic write-downs under certain conditions. The risks are also higher for the platform. A biased or seriously flawed decision machine can jeopardize its reputation and commercial prospects.

Overall, we hypothesize that a CRM that adapts its product portfolio well to user preferences, has high-quality or even unique AI applications, and avoids major mistakes or even scandals will be successful.

Of central importance is likely to be an application that is at the heart of any corporate restructuring, namely the recalibration of the firm's financial architecture. A sophisticated application that makes a particular financial instrument "self-driving", i.e. dynamically adapting to changing macro- and microeconomic conditions, has the potential to form the core of a more comprehensive CRM. Ultimately, more and more elements of the firm's financial architecture would share this property, i.e. become "self-driving".

This would fundamentally change the nature of corporate restructuring. Currently, a corporate restructuring is a discrete economic event which typically occurs when a firm experiences or is threatened with financial distress. In the future, corporate restructuring could be a continuous process that prevents an acute crisis situation from even arising. This also

means that the need for negotiations is significantly reduced. The better the algorithms work, the less need for ad hoc crisis management.

Two implications of this stand out. First, the role of humans in the restructuring process will change, particularly that of lawyers and other restructuring professionals. Fewer negotiations mean fewer human negotiators. Many processes and decisions will be completely automated. Where humans continue to be involved, their role will change. They will be assisted by intelligent machines, which they have to use skillfully. Lawyers and financial advisors will work together with computer and data scientists in multi-disciplinary teams. Traditional human negotiation skills and experience will be far less important than they are today.

Second, *ceteris paribus*, corporate bankruptcies will occur less frequently. The process fragility of corporate workouts will be reduced, and more firms should be able to completely avoid acute financial distress with the help of CRM applications or at least successfully resolve such distress out of court. Chapter 11 or similar processes will still be required as a backup. State-supplied corporate restructurings could benefit from adopting technological innovations that have proven successful in the private sector. And private platform providers could emulate best legal restructuring practices in the operating conditions of their business.

VII. CONCLUSION

AI applications are fundamentally changing business practices in general and commercial negotiations in particular, and are doing so at breakneck speed. Corporate workouts often involve complicated negotiations between many different stakeholders with diverse interests and preferences. If successful, they promise significant savings in direct and especially indirect bankruptcy costs. However, the lack of a clear legal framework for corporate workouts leads to significant “process fragility”, particularly due to parties’ strategic incentives to maximize their personal gain at the expense of others.

The potential of AI applications to reduce this process fragility and stabilize corporate workouts is obvious. The core idea of this article is the introduction of a private, online and open platform designed to support or even automate corporate workouts, using AI tools and services. We have called this the “Corporate Restructuring Machine” (CRM).

Stakeholders, particularly creditors and shareholders, could join the platform and opt into AI applications at different times, for different services, and at different prices. Based on previous work on the use of AI applications in negotiations, we have shown that better informed parties will make better decisions in a corporate workout, and in a much smoother process.

We have described the process of setting up and running the CRM, based on the current practice of corporate workouts. Old and new contractual solutions to financial distress could be effectively implemented with the CRM. This includes the “London Approach” and the INSOL Principles for corporate workouts, and various proposals for concluding “bankruptcy contracts” or choosing the applicable bankruptcy regime. The endpoint of the development could be a fully automated (AI-driven), comprehensive and private reorganization process/system.

An important aspect of this development is that technology is not only used to automate or replicate existing processes. Technology will also shape these processes. This can even create a new system whose properties differ fundamentally from those of existing processes. In other words, the corporate workout of the future—and the corporate bankruptcy process—is likely to have features that few would recognize as current features of a business rescue or bankruptcy process.

There is a simple explanation for this. Applications are developed based on what is technically feasible. This includes the data required to train supervised learning algorithms. The result could be a new process that is more efficient than the old one. However, there is also the risk of making compromises on key elements of existing systems and processes

in order to automate what can be automated. System designers need to be aware of this trade-off. Technical feasibility should not dictate how corporate restructuring practice evolves.

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