

# "Optimizing Insolvency and Recovery Processes Through the Use of Artificial Intelligence (AI) Solutions

## A Practical Approach

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## 1. INTRODUCTION – ARTIFICIAL INTELLIGENCE, EVOLUTION, RISKS, AND CHALLENGES.

The development of Artificial Intelligence (AI) in recent years has transformed our daily lives in its many facets. Advances in hardware, software, and the increasing volume of available data have placed AI at the service of humanity, applying it, in practice, to all aspects of human existence.

We are facing the most fascinating and promising field of modern technology, capable of performing tasks that were previously reserved exclusively for humans, ensuring a level of optimization, efficiency, and personalization of results that were previously unattainable. However, AI's capabilities—both those it has already achieved and those it will certainly reach—pose serious challenges to modern societies, as they can easily jeopardize acquired and inalienable rights, as well as fundamental and cross-cutting public interests.

## 2. RISK FRAMEWORK UNDER REGULATION (EU) 2024/1689 OF THE PARLIAMENT AND THE COUNCIL, JUNE 13, 2024

Regulation (EU) 2024/1689 of the Parliament and the Council, dated June 13, 2024, was introduced precisely to establish a uniform and common legal framework for the development of AI solutions within the European space. Its primary objective is to protect established public rights and interests, minimizing as much as possible the risks of their violation by AI solutions. In broad terms, the Regulation aims to safeguard the rule of law, ensuring that public interests, in a comprehensive sense, are not jeopardized. These interests include, from a public policy perspective, matters of personal and community security, health, trade, economy, and justice.

This Regulation establishes a uniform risk assessment framework for various AI systems based on their potential impact on the fundamental rights and public interests across EU Member States. The risk classifications, listed in descending order, include: **"Unacceptable Risk"**, **"High Risk"**, **"Specific Risk in Terms of Transparency"**, and finally, **"Minimal Risk"**.

AI systems classified as **“High Risk”** include those that hypothetically have the potential to compromise people’s safety and their fundamental rights as enshrined in the **Charter of Fundamental Rights of the EU**. According to the Regulation, these systems include, among others, **“AI systems designed for use by law enforcement authorities, or on their behalf, by institutions, bodies, or agencies of the Union, in support of law enforcement authorities.”** In practice, this classification applies to AI systems used in legal and judicial proceedings, court decisions, and the administration of justice. The **high-risk classification is justified by the potential impact of such AI systems on democratic institutions, the rule of law, individual freedoms, as well as the right to legal action and a fair trial.**

To mitigate these risks, it is essential that AI systems **are designed and configured to assist justice, judicial activity, and the administration of justice in ways that do not compromise the independence of legal decision-making.** Thus, **a final legal decision must always be the result of human deliberation,** even if AI systems play a supporting role in preparatory tasks, analysis, and consolidation of legal arguments. The fair resolution of legal disputes and judicial decision-making must remain **exclusively human responsibilities.** However, AI can be employed **to process and analyze data in judicial proceedings, identify patterns, assess risks, analyze documentation (distinguishing relevant from irrelevant documents), and assist in retrieving relevant jurisprudence and legal doctrine.**

The use of AI in justice will be **safer and more effective when applied to numerical and factual data,** as these involve purely technical analysis and conclusions rather than subjective matters concerning human behavior or personality. For this reason, **it is expected that AI will first be implemented in legal domains that, while influenced by human activity, primarily involve technical, numerical, documentary, or procedural analysis.** In these cases, human intervention—though still present—will take on a **subsidiary role in the decision-making process.**

Thus, **the use of AI systems in the judicial sector will likely begin in areas where risk management is more straightforward,** particularly in **supporting decision-making processes in fields such as commercial law, insolvency and business recovery law, competition law, intellectual and industrial property law, banking law, financial law, and corporate law.**

### **3. OPTIMIZING INSOLVENCY PROCESSES IN THEIR LIQUIDATION PHASE THROUGH AI SOLUTIONS**

In the field of insolvency law, which serves as a legal framework to regulate the situation of insolvent debtors, ensure creditors’ rights, and facilitate the recovery of businesses and individuals, AI systems can play a **key role.** AI can be applied at various stages of judicial proceedings, whether for **liquidation or recovery,** and even in a **preventive phase** through

models that help businesses and individuals predict, anticipate, and correct **insolvency risks or financial difficulties**.

Regarding insolvency proceedings in their **liquidation phase**, and breaking down this analysis based on the common stages across most insolvency cases of this nature, we can identify **several procedural moments where AI can be applied**, including:

- **Verification of insolvency status:** According to **Article 3 of the Insolvency and Business Recovery Code (CIRE)**, paragraph 1, a debtor is considered insolvent when they are **unable to meet their due obligations**. Furthermore, paragraph 2 states that insolvency also applies to **legal entities whose liabilities significantly exceed their assets, as assessed according to applicable accounting standards**.

Paragraph 3 of Article 3 of CIRE provides **exceptions** for insolvency situations, stating that an entity is not deemed insolvent if its **assets exceed its liabilities** under specific conditions:

- a) Only identifiable balance sheet elements are considered in assets and liabilities, at their fair value.
- b) If the debtor owns a business, its valuation is based on **continuity or liquidation prospects**, whichever is more likely, but **excluding goodwill from the valuation**.
- c) Liabilities that are only payable from **distributable funds or remaining assets after satisfying secured creditors** are not included.

This legal criterion is **primarily financial and accounting-based**, meaning that insolvency assessments depend on financial and economic data **reflected in corporate accounting**. Even for individuals, insolvency verification is a **mathematical operation**, evaluating assets and liabilities as well as financial capacity to meet due obligations. In both cases, the assessment relies on **predefined legal criteria validated by external and credible entities**.

AI can be used to **analyze, validate, and apply these financial and accounting criteria**, determining whether an entity—whether a **company or an individual**—is legally insolvent. However, **final validation must always be carried out by a human judge**, ensuring that **non-financial or non-accounting factors** that may influence the case are not overlooked.

- **Reducing the time for financial and accounting analysis:** The **financial and accounting analyses** required under **Article 3 of CIRE** are **highly complex** and demand extensive review by **courts and involved parties**. These assessments often require **expert technical reports, prolonging** the declaration of insolvency and delaying legal proceedings **that should be swift and effective**.

The use of **AI systems in analyzing and interpreting financial and accounting data** relevant to **Article 3 of CIRE** would introduce **unprecedented efficiency and accuracy**. By

**automating** these assessments, AI can provide **immediate technical conclusions**, preventing **unnecessary delays** in insolvency proceedings.

- **Credit Claims:** Creditors include all individuals or entities holding property-related claims against the insolvent party or claims secured by assets within the insolvency estate, provided that their claim originates before the declaration of insolvency, as established in Article 47 of the Insolvency and Business Recovery Code (CIRE). These claims are classified and ranked within the process based on their origin, legal basis, creditor type, and any guarantees associated with them, allowing for their categorization as secured, privileged, common, subordinated, or conditional claims.

According to **Article 128 of CIRE**, creditors must **file their credit claims** within the deadline set in the **insolvency declaration ruling**. This must be done through a formal request accompanied by all **available supporting documents**, specifying the **origin, amount, legal basis, guarantees, interest rates, and any conditions (resolutive or suspensive) applicable to the claim**.

Most of these credit claims **are reflected in the accounting records** of both the debtor and the respective creditors. Particularly in cases of **banking or financial claims**, these debts are often documented in **public or authenticated instruments**. This means that **determining the value of claims, calculating interest, and classifying them** is a task well within the **capabilities of AI systems**, ensuring **accuracy and security**. AI solutions **can cross-reference accounting data between debtors and creditors** and facilitate the **analysis and preparation of claim documentation**.

By integrating **AI into this phase of the process**, the **burdensome and complex nature of credit claim submissions** would be **significantly reduced**. AI would ensure not only the **filing of all existing claims** in insolvency proceedings **but also the precise calculation of claimed amounts**, eliminating the need for **lengthy and costly manual reviews**.

- **List of Recognized and Unrecognized Claims:** Once credit claims have been submitted, the appointed insolvency administrator must prepare a list of all recognized creditors and another list of unrecognized creditors, both organized alphabetically. These lists include not only creditors who have filed claims but also those whose rights are recorded in the debtor's accounting records, as outlined in Article 129 of CIRE.

The preparation of this list **is primarily an administrative task**, involving the **organization of creditor information** based on **filed claims and debtor accounting records**. The insolvency administrator gathers this information to create the **list of recognized claims**.

Although administrative, **this task is highly time-consuming**, particularly in cases involving **hundreds or even thousands of creditors**. Moreover, according to **Article 129(2) of CIRE**, this list **must include:**

- The **creditor's identification**,
- The **nature of the claim**,
- The **principal amount and interest accrued**,
- The **guarantees and privileges associated with the claim**,
- Any **conditional clauses (suspensive or resolute)**.

As with the **credit claims phase**, AI can efficiently handle the preparation of these lists. AI can **process creditor data logically and systematically**, ensuring a **smooth transition** between the **credit claims phase** and the **classification of recognized and unrecognized claims**. Automating this stage would lead to **faster and more efficient case management**.

- **Credit Ranking:** At the final stage of the insolvency process, the court must issue a ruling on the verification and ranking of claims. In this decision, the court determines how each claim will be paid, based on available assets in the insolvency estate and any associated guarantees.

This is **primarily a mathematical operation**, making it **well-suited for AI processing**. AI systems can be **designed to consolidate and analyze all financial data**, including:

- The **value of each claim**,
- The **guarantees attached to each claim**,
- The **legal prioritization of claims and guarantees** in accordance with established legal principles.

- **Distribution of Funds (Rateio):** In the final phase of the insolvency process, the insolvency administrator submits the final accounts, including the distribution of available funds to creditors. This distribution follows the guidelines set in the ruling on claim verification and ranking.

This phase is **highly mechanical**, involving **the preparation of a structured financial report** detailing how assets will be distributed **according to legal criteria**. AI systems can easily **automate this process**, ensuring that **each creditor receives the correct amount** after the liquidation of the insolvency estate.

- **Classification of Insolvency and Avoidance of Acts Detrimental to the Insolvency Estate:** The classification of insolvency as “fraudulent” or “culpable” aims to determine whether the debtor's financial collapse resulted from unforeseeable circumstances or intentional acts by the debtor or its representatives.

Because this involves **human behavior and intent**, it requires a **fundamentally different approach** compared to the **previously discussed automated phases**. In this stage, **AI systems would play a supporting role** rather than a **decisive one**. AI can assist by:

- **Analyzing relevant legislation**,
- **Researching legal doctrine and case law**,

- **Processing and organizing documentation,**
- **Interpreting complex financial and accounting data,**
- **Detecting behavioral patterns indicative of fraudulent activity.**

- **Avoidance of Fraudulent Transactions:** The avoidance of fraudulent transactions allows the insolvency estate to reverse harmful business deals conducted prior to insolvency. While fraudulent transactions often involve subjective elements, such as the intent and conduct of involved parties, AI can still play a crucial role.

AI can assist in:

- **Legal analysis,**
- **Case law research,**
- **Behavioral assessments,**
- **Financial and accounting analysis of significant complexity.**

By **integrating AI into these aspects of insolvency proceedings**, decision-makers would gain access to **powerful tools** that enhance **efficiency, accuracy, and risk management**, ultimately leading to **faster and more effective insolvency resolutions**.

#### **4. OPTIMIZING RECOVERY PROCESSES THROUGH AI SOLUTIONS**

Following this brief analysis of the potential use of AI systems in **liquidation-oriented insolvency proceedings**, which primarily focused on **procedural aspects and document processing** to streamline and accelerate proceedings, we now turn our attention to **recovery processes**, whether for **individuals or businesses**.

Although these **recovery processes** share procedural similarities with **liquidation insolvency proceedings**, their **ultimate purpose is fundamentally different**. Instead of **maximizing asset liquidation** to satisfy creditors, recovery proceedings aim to **restore the debtor's financial and economic stability**, allowing them to **remain operational** while **fulfilling their obligations** to creditors under the most favorable conditions possible. This **successful recovery** has **positive economic effects**, including **job preservation, reduced creditor losses, and greater market stability**.

AI, in addition to being **applicable in credit claims and creditor list preparation**, as seen in **liquidation insolvency cases**, can **play an even more decisive and strategic role in recovery processes**. AI can serve both the **debtor's objectives** and the **creditors' interests** by optimizing key decision-making phases.

- **Viability Analysis of Recovery Plans:** Assessing the **viability of Recovery Plans** is a **highly complex task** for **courts, creditors, and even debtors themselves**. This process requires the consideration of a **broad set of interrelated financial, economic, commercial, and accounting variables**. A **comprehensive and cross-sectional perspective** is essential to reaching a **sound and reliable conclusion**.

AI can **analyze financial and accounting data** to assess the **feasibility of a given Recovery Plan**, providing a **well-founded recommendation** that helps courts, creditors, and debtors **make informed decisions**.

For debtors, AI can **support not only the preparation of the Recovery Plan** but also assist in making **strategic decisions** about the **best course of action**. AI can evaluate:

- The **effectiveness of proposed measures and strategies**,
- **Potential plan modifications**,
- Whether **financial recovery is truly achievable**,
- Whether **liquidation would be a more viable alternative**.

- **AI-Assisted Voting Decisions for Creditors:** When creditors are presented with a **Recovery Plan proposal** within a recovery proceeding, they must decide whether to **approve or reject it**. AI can **assist in this decision-making process** by:

- **Assessing the overall feasibility of the Plan**,
- **Evaluating the expected repayment terms for the specific creditor**,
- **Determining the impact on the creditor's financial structure**.

By leveraging AI for these assessments, creditors can **make more informed voting decisions** based on **precise financial projections and risk analyses**.

## 5. CONCLUDING REMARKS

In summary, this analysis has identified **several potential applications** of AI systems in insolvency and recovery proceedings. Although these AI systems are classified as **“High Risk”** under the **EU Regulation**, their role in the **processual phases outlined** involves **minimal interaction with human behavior or subjective decision-making**.

In most cases, AI is **restricted to auxiliary tasks** involving **numerical, accounting, financial, and documentary analysis**. This **controlled and limited use** significantly **reduces risks** while delivering **substantial benefits**, particularly in terms of **process efficiency and speed**—which are **crucial in insolvency and recovery proceedings**.