Data Driven IBC

Data analysis plays a crucial role in reaching appropriate decisions in various processes under the IBC right from the admission of the case to its final closing. Therefore, a data-driven culture is imminent in the organizational hierarchy across all pillars of the IBC. In the present article, the author highlights the importance of Artificial Intelligence at various stages of the insolvency process from admitting cases to allocating the assignment to the most suitable IP, finalizing the Resolution Plan, and much more. The author argues that digitization in IBC needs upgradation for AI applications and makes a strong point for comprehensive data storage and exchange protocol in order to ensure a single source of truth for AI algorithms to work on. ***Read on to know more…***

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1. Data Driven IBC (DD.IBC) - Introduction

The Insolvency and Bankruptcy Code, 2016 (IBC) ecosystem is undergoing reforms at a rapid pace in order to keep up with rapidly changing legal, economic and sociological scenarios. It needs to harness the use of Artificial Intelligence (AI) in order to drive the IBC processes in a more efficient and effective manner and improve the outcomes including minimizing delays, increased transparency, increased participation of resolution applicants, facilitation in effective decision making, and maximization of value etc.

Data is central to the application of Artificial Intelligence (AI) and large amounts of data are required to train AI to create algorithms, learn patterns, relationships, and develop predictive models. It is the fuel that powers AI systems, providing the information needed for training, validation, and testing. Insolvency regimes around the world are shifting towards data-driven policy creation and evaluation. Governments are investing heavily in data creation, collation, and analysis in order to leverage AI to make decisions that will help them create relevant policies in their insolvency systems.

Digitization in IBC is at present not conducive to AI applications since it presently operates in a data-poor

environment and does not have standards around data storage and exchange formats. It is easy to inject data into a decision-making process, however it is hard to normalize and automate data driven processes. A data-driven-culture needs to be established in the organizational hierarchy across all pillars of the IBC.

The stakeholders of IBC presently work in silos and have their data stored in separate fragmented databases. There is a pressing need for a comprehensive data storage and exchange protocol in order to ensure a single source of truth for AI algorithms to work on.

2. DD.IBC - Data Sources

There are several sources from which financial and insolvency data can be collected and analyzed in order to build data-driven systems and applications. Data sources need to ensure that the data they hold is accurate, reliable, and is regularly monitored to ensure that it remains up-to-date and relevant.

Primary sources for financial data include balance sheets, income statements, cash flow statements, and other financial records of companies and include data sets from MCA, IBBI, IU, NCLT and IPs.

a) MCA (Ministry of Corporate Affairs) serves as an online repository of corporate data. It provides access to over 4 million companies, over 1 million directors, and over 12 million documents. Financial data is being stored in XBRL (eXtensible Business Reporting Language) format, which can enable the exchange of financial data between different systems.

b) IBBI (Insolvency and Bankruptcy Board of India) provides access to data and information related to IBC proceedings, process stakeholders including insolvency professionals, resolution applicants, financial and operational creditors, resolutions plans and court orders. The data collected by the IBBI is used to monitor the progress of insolvency proceedings, ensure compliance with regulations, and analyze trends in the insolvency market. It maintains data with respect to various processes (CIRP /CILP /CIVLP /PPIRP /FTIRP /PG2CD) under the Code. It disseminates information pertaining to orders issued by Tribunals and Courts, and the details of various stakeholders (IPs /IPAs / IUs / IPEs / RVs / RVOs) on its website.

c) IU (Information Utility) collects, stores, and maintains financial information of debtors, and provides access to such information to creditors and other stakeholders. This data set can be used to assess the creditworthiness of individuals and businesses, and to identify those who are likely to default on their loans.

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d) NCLT/NCLAT (Adjudicating Authority) uses the e-courts module which has data related to court proceedings such as case details, court orders, judgments, transcripts, and other legal documents.

e) IPs use case management systems or Office Applications including excel and word etc.

Secondary sources of insolvency data include government reports, stock exchange data, and corporate filings which are available from SEBI, RBI, and credit agencies like CIBIL as follows:

a) SEBI (Securities and Exchange Board of India) which protects the interests of investors and promotes the development of the securities market. It provides data regarding investment and trading activity, corporate disclosures, mergers and acquisitions, and investor complaints. The data collected by SEBI is used to ensure compliance with regulations, monitor market activities, and analyze trends in the securities.

b) RBI (Reserve Bank of India) which collects data related to the banking sector which includes information related to banking transactions, credit ratings, and other financial indicators. It ensures compliance with regulations, monitors the functioning of the banking sector, and analyzes trends in the banking industry.

c) CIBIL (Credit Information Bureau (India) Limited) which collects and maintains data from banks and other financial institutions and provides a credit score based on the data.

AI can help us understand complex situations more quickly and accurately, in order to make better decisions in the right direction. It is logical to identify specific problems, based on hard evidence collected after analyzing data from various sources, to collect and analyze feedback in order to effectively reinforce legislative interventions. However, the disintegrated IT platforms being used by different pillars of IBC are restricted to their individual mandates and do not allow for technology interventions between these institutions. The portals of these institutions work in silos and need to create protocols for them to be interlinked with each other in a structured manner. This will result in a single source of truth even when the data is being pulled from disparate databases. All stakeholders having access to the system can have the same view of the status of the insolvency process and in establishing the facts of the case.

3. DD.IBC - Data Integration

Besides shortage of data, overflow of inaccurate and useless data is a major challenge. Insolvency data in India is siloed in separate data sources which operate on separate technological platforms. The primary challenge is to integrate this fragmented data by re-normalizing data tables and creating data standards to streamline data exchange amongst various stakeholders. There is a need to combine data from multiple sources and consolidate it into one single source of truth.

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Accurate up-to-date data which is consistent across systems can be integrated in real-time is critical for data analysis and informed decision making by AI systems. The challenges of data compatibility, data silos, data quality and data validation have to be addressed as explained below:

(a) **Data Compatibility**: Insolvency data comes from various sources. Each source has their own rules of data interaction. Extracting, transforming, and making data compatible with a common integrated system will be time and resource consuming. This will become more challenging with time as the number of data sources grows.

This issue is generally addressed using metadata which is data about data. It is information that describes the characteristics of data and provides context. It supports the validity, accuracy, and usability of related data. Metadata helps to harness the power of data, enabling faster and accurate data extraction. Without metadata management, data initiatives can spiral out of control.

(b) **Data Silos:** Data distributed across separate institutions is generally overlapping and inconsistent. This makes a holistic view of data very difficult. Data silos cause problems as the information is often stored in formats that are inconsistent with one another making data analysis impossible.

This issue is generally addressed by data harmonization which includes taking data from disparate sources, removing misleading or inaccurate items, and making all that cleaned and sorted data compatible. AI can play a critical role in the data harmonization process. AI makes it easier to prepare data from various sources, hence speeding up the development of big data applications.

(c) **Data Quality:** It is obvious that badly structured, incomplete or inaccurate data results in inefficient analyses. Bad quality of data may result from data-entry human errors, or faulty database structure (fields with the same meaning but different names across systems).

Needless to say, that data-driven culture needs to be adopted across various departments. Roles and responsibilities will have to be assigned adopting best practices like the data quality cycle (DQC). DQC is made up of analyzing, cleansing, and monitoring data quality. Data is cleaned according to established business rules and is protected and constantly monitored to ensure sustained quality.

(d) **Data Cross-validation:** It is cross-validation of data sourced from multiple databases. Data validation involves checking for inconsistencies, verifying that data is in the correct format, before performing calculations on the data.

(e) **Data-Based Reasoning**: Indicators are used to determine whether data is complete, accurate, and reliable or not. They are used in data-driven

decision-making and analytics to identify trends, patterns, and relationships in data.

4. DD.IBC - Data Interoperability

Data interoperability is the ability of different systems, applications, and services to exchange, integrate, and share data with each other. It is the ability for organizations to use disparate data sources and exchange data in a consistent and reliable way. It helps to provide a unified view of data and to efficiently manage and utilize data across multiple systems.

Open data standards/protocols (ODS) like Extensible Markup Language (XML) and Java Script Object Notation (JSON) formats, enable data to be interoperable and easily shared between different organizations and help to reduce the costs and complexity of data sharing, and making data more accessible to a wider range of users.

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XML/JSON are a way of encoding data in a format that is easily readable by humans and machines and enables data exchange, and data storage, in a manner that ensures data interoperability and accuracy. Taxonomies are created based on XML/JSON protocols which enable interoperability and machine readability of the data. A few examples of which are as follows:

(a) **eXtensible Business Reporting Language (XBRL)** is an open standard for digital data exchange, specifically designed for business and financial reporting. It allows businesses to provide financial statements in a standardized format that is easily understandable by computers and other electronic devices. This makes it easier for businesses to share their financial data with regulators, investors, and other stakeholders. XBRL helps businesses save time and money by reducing the need to manually input and process financial data. XBRL also enables businesses to compare their financial performance with peers in their industry, and to accurately benchmark their own performance.

(b) **Insolvency XML (InsolXML)** is an open international standard for insolvency and restructuring data. It is currently being used in the United Kingdom, Australia, France, Germany, and the United States. It is being used for a variety of applications, including legal proceedings, insolvency and restructuring data exchange, and more. It is being used by legal professionals, financial institutions, and businesses to streamline their insolvency and restructuring processes.

(c) **LegalXML** is a set of standards developed by the Organization for the Advancement of Structured Information Standards (OASIS) to promote the use of XML in the legal industry. The standards are designed to provide an open, standardized way of exchanging legal documents and data. The LegalXML standards include standards for court filing and documents, legal citations, and legal notices. The LegalXML standards are an important tool for improving data exchange between different legal systems and applications.

5. DD.IBC – Applications

(a) **Early Warning Systems (EWSs)**

Insolvency regulators can use data analytics to develop risk assessment models and early warning systems. These models analyze financial data, industry trends, and other relevant factors to identify companies that are at risk of insolvency. By detecting early warning signs, regulators can intervene at an early stage and take appropriate actions to prevent insolvency or mitigate its impact.

EWS can help with MCA data for financial analysis and insolvency detection by analyzing and identifying patterns in data. AI systems can be used to detect anomalies and identify potential areas of risk. AI systems can also be used to compare financial data across different organizations and to identify trends and relationships. It can also be used to automate the process of financial analysis and insolvency detection, reducing the time and effort required. AI can help to improve the accuracy and reliability of financial analysis and insolvency detection.

(b) Asset Liquidation Marketplace (ALM)

An insolvency assets marketplace is a platform for buyers and sellers of distressed or insolvent companies' assets. These assets may include real estate, equipment, intellectual property, intellectual property rights, and other types of assets that are not easily liquidated. Insolvency assets marketplaces facilitate the sale of such assets at discounted prices to investors and other interested buyers. The goal of such marketplaces is to help companies in financial distress to maximize the value of their assets and to minimize the losses associated with insolvency.

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AI can help in the marketplace of insolvent assets by providing a more efficient and effective way to identify, analyze, and evaluate potential investments. AI algorithms can be used to scan and analyze large amounts of information in order to identify potential investments that could provide the highest return. AI can also be used to assess the risk associated with a potential investment and to recommend potential buyers or investors. In addition, AI can help automate the process of negotiating and completing transactions, providing a more efficient and cost-effective option for buyers and sellers alike.

(c) Insolvency Dispute Resolution (IDR)

India is slated to become a $5 trillion economy. With a rise in the economy, disputes are bound to increase. There is a need to build the capacity of dispute resolution professionals like arbitrators, mediators, and lawyers especially for commercial disputes.

On the lines of ADR/ODR, international standards will have to be developed for IDR. Ethical delivery of Insolvency Dispute Resolution services will remain paramount to providing access to justice by harnessing the power of technology while reducing risks to data security, stakeholder rights, and confidentiality.

Nurturing Insolvency Professionals in IDR will play a critical role in advancing the IDR ecosystem, which could be a community driven, decentralized network of professionals.

(d) CIRP Management System

AI can provide a platform for a case management system, automated processes to file applications with the AAs, delivery of notices, enabling interaction of IPs with stakeholders, storage of records of CDs undergoing the process, and incentivizing participation of other market players in the IBC ecosystem. It may also allow regulators and the AAs to exercise better oversight over their respective domains of functioning through the consolidated information available on the e-platform.

(i) Automated Admission of CIRP Applications: Section 215(2) of the Code makes it mandatory for the creditors to submit financial information to the IUs. IBCAI algorithms can access this debt/default/dispute information from IU which can be relied on for speedy default verification and swift initiation of the CIRP. This will save substantial time spent by the AA in determining a default, which includes time taken for production of evidence, contesting of arguments of the necessary parties on the occurrence of a default, or existence of a dispute etc.

(ii) Automated Appointment of IRP: There are issues involving the appointment of IRP which may be done by the AA/FC/OC or even the CD. An IRP is required to hold the trust and confidence of all the stakeholders and is best appointed in an independent and transparent manner. AI algorithms can sift through 'Panel of IPs' and select the most appropriate IP for an assignment based on relevant factors such as domain-experience, proximity to the location, expertise, infrastructure. It can also suggest an appropriate fee structure based on the complexity of the assignment.

(iii) Automated determination of quantum of fine: In case any proceeding is maliciously initiated with no reasonable prospect of

success or based on insufficient evidence submitted without any purpose to determine the actual issue, AI can determine imposition of penalty where it believes that such an application has been filed with frivolous or vexatious intent.

(iv) **Automated creation of resolution plans:** AI algorithms can sift through thousands of resolution plans created thus far and can be trained to create effective resolution plans within the restraining parameters provided by the resolution applicants.

(v) AI algorithms can sift through various resolution plans and can select the plan which offers the best opportunity for lasting resolution given the objective to be met be it social or financial.

6. DD.IBC – Conclusion

Insolvency is an enormously complex industry. It involves a wide variety of public and private stakeholders (including financial and operational creditors, corporate and individual debtors, insolvency professionals, regulators, and NCLTs). Generally, the stakes are very high, and the environment is always ripe for disputes.

Designing an AI driven insolvency system requires a multidisciplinary approach that combines expertise in finance, data science, and regulatory policy. Data is

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increasingly being used by insolvency regulators around the world to improve the efficiency, effectiveness, and transparency of insolvency processes. Here are some ways in which data can be utilized:

a) To provide insights and guidance for better oversight, evolution of insolvency systems and regulatory frameworks to the regulators and policymakers

b) To help in better assessment of creditworthiness of companies, management of insolvency risks, and decision-making processes to the financial institutions and creditors.

c) To complement their expertise in identifying and managing insolvency cases effectively to insolvency professionals and practitioners.

d) To serve as a basis for further research and exploration of innovative approaches to the researchers and academicians.

e) To make informed decisions and take proactive measures to avoid insolvency of the business owners and managers.