Chapter 09

Bankruptcy & liquidation: A contemporary approach
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Technological Innovations in Bankruptcy and Liquidation

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Learning Objectives

At the end of this chapter, readers ought to be in a position to:

1. Demonstrate the impact of new technologies (AI, blockchain, big data and the metaverse) on the practice of insolvency.
2. Know artificial intelligence (AI) models of financial distress.
3. Explain how blockchain can be used in transparency, tracing of assets, and verification of creditors.
4. Discuss the application of smart contracts in the restructuring and liquidation process.
5. Examine how digital forensics and metadata can be used to conduct investigations on insolvency.
6. Get to know digital insolvency administration and virtual court hearings.
7. Determine insolvency risk in cybersecurity.
8. See the future of the insolvency practice in a digital and decentralized global economy.

INTRODUCTION

The technological revolution in the 21st century has seen an unprecedented revolution that is defining the changes in every sector of the global economy. Artificial intelligence (AI), blockchain, big data, and the metaverse are among the technologies that are transforming the way businesses are conducted, financial information is handled and managed, and insolvency is processed. Bankruptcy and liquidation, which used to be considered as manual, document-driven, and time-consuming processes, are being digitalized, automated, and improved with the help of the latest technologies.(1)

The use of technology in insolvency management in the Nigerian environment is still at its initial phase but it is quickly developing through Corporate Affairs Commission (CAC) e-platforms, digital financial reporting by Financial Reporting Council of Nigeria (FRCN), and forensic accounting instruments of regulators and practitioners.(2)

This chapter examines how the technological innovations, especially the AI, blockchain, metadata analytics, and the metaverse are altering the legal, accounting, and ethical aspects of bankruptcy and liquidation. It highlights opportunities, risks, and policy implications on practitioners, regulators and scholars in Nigeria and the rest of the world.

DEVELOPMENT

The Artificial Intelligence

Overview of AI Applications

Artificial Intelligence (AI) can be defined as systems that can rival human intelligence to experience learning, reasoning and solving problems. AI is currently used in insolvency to analyze data, manage cases, identify fraud, and predict analytics.

Predictive Insolvency Analysis

Predictive models run on AI could process high volumes of data (financial statements, cash flow documents, etc.) to anticipate possible insolvencies. Indicatively, neural network algorithms have improved old-fashioned models such as Altman Z-score with real-time data, social sentiment and macroeconomic factors.

The application of AI in Nigeria to the financial reporting systems, including that of Financial Reporting Council (FRC) and Securities and Exchange Commission (SEC), might facilitate the identification of troubled companies in time to make interventions before they become insolvent.[3]

AI in Asset Valuation and Liquidation

AI devices can help to value assets more precisely through the analysis of market trends and similar transactions, which liquidators can use. The machine learning models have the potential to forecast the best period to dispose of assets and eliminate the undervaluation risks that are typical when liquidating assets through the conventional method.

Legal Decision Support Systems

Legal research applications based on AI (like LexisNexis AI or Case Mine) make the preparation of cases easier by examining legal precedent in bank-related cases and receivership. Such systems can be incorporated in the Nigerian courts which are adopting e-judiciary systems to hasten the process of insolvency litigation.

Implications of Ethics and Profession

The application of AI casts doubts on data security, algorithm bias, and responsibility. Insolvency practitioners need to make sure that AI decision-making is transparent, and they maintain professional judgment when interpreting the results of automated outputs.

Insolvency and blockchain Technology and Digital Trust

Understanding Blockchain

Blockchain is a decentralized electronic registry where data are documented safely and irrevocably in a few nodes. It helps to save the middlemen, which increases the transparency and credibility of the financial transactions.

Blockchain in Asset Recovery and Tracing

Recovery of dispersed or hidden assets is one of the biggest problems in liquidation. The record-keeping property of blockchain enables the tracking of asset ownership and the history of transactions and, therefore, reduces the possibility of fraudulent transfer. [4]

As an example, in case businesses tokenize their assets or keep their supply-chain details on blockchain, when firms start insolvency, liquidators can easily locate, confirm, and reclaim assets.

Advanced Liquidation and Smart Contracts

Smart contracts are self-executing agreements that are coded in a blockchain and can be used to distribute assets based on pre-established policies when certain conditions are fulfilled (e.g., payment hierarchy to creditors). This decreases cases of human error and corruption which promotes fairness and timeliness.

Digital Evidence and Legal Acceptance

Digital evidence in insolvency litigation Blockchain records can be used as admissible evidence. Electronic evidence under the section 84 of the Evidence Act (2011) is slowly being accepted in Nigerian courts, and it is believed that blockchain based audit trails can be applied during the bankruptcy adjudication process.

Liquidation Payments and Central Bank Digital Currency (CBDC)

With the introduction of the eNaira by Central Bank of Nigeria (CBN) in Nigeria, liquidation payments can become transparent and traceable. Liquidators can pay proceeds of creditors by use of e-wallets that ensure that creditors are not misappropriated.

Metadata and Forensic Accounting when Investigating Insolvency

Concept of Metadata

Metadata is data describing other data (dates of creation of document, author, or history of modifications). Metadata analysis in insolvency assists forensic accountants to identify concealed trends, deleted entries or transactions dating back in time, which are indicative of fraud.

Role of Digital Auditing and Evidence

In the case of bankruptcy, the liquidators are frequently faced with incomplete book entries or doctored accounts. Digital metadata (emails, spreadsheets, accounting software) can be extracted forensically, and exposing hidden actions, such as the extraction of assets that were not allowed before the liquidation.

Fraud Detection Metadata Analytics

Metadata tools using AI are based on the transactional histories and can identify anomalies. As an illustration, frequent transfers of funds to offshore accounts at the end of the day can mean that it concerns fraudulent preference payment, which is a violation of the CAMA Section 581 relating to avoidance of transactions.

Data Privacy and Legal Admissibility

Nigeria In Nigeria, metadata evidence admissibility should not be against the Evidence Act 2011 and the Nigeria Data Protection Act 2023. The insolvency practitioners are obliged to strike a balance between transparency and ethical treatment of the confidential data.

Big Data Analytics and Early-Warnings Systems

Predictive Risk Profiling

Big data is a combination of structured and unstructured data such as financial statements, market feeds, and social media to determine trends of financial distress. Machine learning methods identify the occurrence of liquidity crisis at an early stage, which can be addressed before insolvency sets in.

RegTech and SupTech Inventions

Regulatory technology (RegTech) and Supervisory technology (SupTech) allows regulatory

authorities such as CAC and SEC to keep an eye on the health of corporations through automated dashboards. As an example, the AI systems may warn the companies that do not submit annual returns on time or have adverse trends regarding working capital.

The system is integrated with financial reporting to provide accurate and precise data and information.

Relationship with Financial Reporting

The system is linked with financial reporting to present the right and accurate information and data. XBRL (eXtensible Business Reporting Language) standard is globally used to exchange the data between companies and regulating bodies in an automated manner. Adoption in Nigeria would help in improvement of insolvency monitoring and liquidation reporting.

Metaverse Virtual Insolvency Practice

Conceptual Overview

The Metaverse is a 3D virtual immersive space that allows real-time communication between people and corporations. Law on both legal and financial fronts, it is turning into a frontier in terms of digital asset management, virtual business operations, and dispute resolution.

Metaverse Assets and Insolvency

NFTs (non-fungible tokens) and virtual currencies are the newest additions to corporate asset holdings. These digital assets need to be realized, valued and identified in a liquidation situation.

Indicatively, in the case of a Nigerian firm, which possesses NFTs as a marketing tool, the liquidator has to estimate its fair value through the blockchain authentication.

Virtual Insolvency Hearings and Courtrooms

The adoption of virtual hearings by the Nigerian courts has come after the COVID-19. This innovation may be further developed in the metaverse with complete immersion into the virtual courtroom in order to provide the stakeholders, creditors, debtors, judges with an opportunity to communicate with digital case files in real time.

Meetings of Virtual Liquidator

Meetings of liquidators and creditors can be held in the metaversion, which allows them to be more transparent and inclusive of geographically spread stakeholders.

Cybersecurity, Data Governance and Insolvency

The Cyber risks in insolvency practice

Digital insolvency technology is prone to cyber-attacks, and data breaches. Weakened systems may alter the records of the liquidation and facilitate the diversion of assets.

Data Governance Framework

The practitioners will be required to adhere to the Nigeria Data Protection Act (NDPA 2023), which encompasses ensuring safety of the creditor data, personal records, and financial documentation.[5]

Blockchain as a Cyber-security Means

The cryptography-based architecture of blockchain offers decentralization of security layer

that reduces the possibility of manipulation and transparency of assets realization.

Policy Reform Opportunities and Implications

Legislative Reform

The insolvency regime of Nigeria needs to be modified to accommodate tangible identification of digital assets and evidence of blockchains. The use of AI-based auditing standards in Financial Reporting Council of Nigeria Act may standardize the use of technology.

Building of institutional capacity

The insolvency, judge, and regulator training programs must focus on AI and data analytics, as well as, blockchain literacy. Research and innovation can be developed by joining forces with BRIPAN, ICAN, and universities.

National Insolvency Technology Infrastructure Development

The Insolvency Data Portal (IDP) may be centralized to combine company filings, liquidated status, claims, and court judgments to enhance the availability of data and its policy analysis.

Fintech Ecosystem Cooperation

The collaboration of regulatory agencies with fintech startups can provide a boost to the development of innovation in insolvency automation, valuation systems, and creditor payment processing.

Opportunities and Challenges

Table 9.1. Opportunities and Challenges

Opportunities	Challenges
Enhanced transparency and speed	Cybersecurity risks
Automated asset valuation	High implementation costs
Blockchain-based accountability	Limited legal recognition
Global collaboration via digital evidence	Skills gap among practitioners
Predictive prevention of insolvency	Data privacy and ethical dilemmas

The Future of Technology in the Insolvency Practice.

Insolvency administration will be transformed through the intersection of AI, blockchain, big data, and immersive technologies. Subsequently, autonomous liquidation bots, artificial judges to adjudicate small claims, and cross-border regulatory data-integrated smart insolvency platforms will be available in the future.

In the case of Nigeria, the following decade will create the most important chance to have a resilient, open, and technically powered insolvency framework that will be able to support sustainable business development, secure investors, and strengthen financial stability.

SUMMARY

This chapter has explored the opportunities presented by the emerging technologies of AI, blockchain, metadata, and big data as well as the metaverse in the transformation of the practice of bankruptcy and liquidation across the world and in Nigeria. Such technologies improve transparency, efficiency, and trust and present novel risks around cybersecurity, ethics,

and legal interpretation. Strategic reforms and capacity building to embrace innovation will make Nigeria the leader in digital insolvency administration.

REVIEW QUESTIONS

1. Describe the ways AI can be used to improve insolvency prediction and asset valuation.
2. Talk about the use of blockchain in promoting transparency in the process of liquidation.
3. What is the role of metadata analysis in helping forensic accountants with insolvency cases?
4. Determine the viability of metaverse in virtual insolvency practice.
5. Trace three key policy reforms that Nigeria needs to implement to incorporate technology in administration of insolvency.

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