AMERICAN BANKRUPTCY INSTITUTE

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Ethical Considerations in AI Valuation

Jackson D. Toof, Moderator
ArentFox Schiff LLP | Washington, D.C.

Hon. Lisa G. Beckerman
U.S. Bankruptcy Court (S.D.N.Y.) | New York

Jordana L. Renert
Lowenstein Sandler LLP | New York

Boris J. Steffen
Province, LLC | Miramar, Fla.

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VALCON 2024

Panel title: Ethical Considerations in AI Valuation

Description: We will be discussing the various ethical implications of AI technologies and how they may affect valuation, including issues related to bias, fairness, and responsible AI.

Date: Wednesday, March 20, 2024

Time: 8:45 – 10:00 a.m.

Location: New Orleans, LA

The overarching goal for this panel focused on "Ethical Considerations in AI Valuation," is to ensure that participants gain a comprehensive understanding of some of the ethical and legal challenges and implications associated with the use of AI technologies in the valuation process. Ethical considerations in AI technology are crucial, especially in the context of valuation. This panel will explore some key ethical and legal considerations and their implications for AI valuation, focusing on, *inter alia*, issues related to bias, fairness, and responsible AI:

At the end of this panel, participants will understand the following:

1. **How traditional valuation models are derived.**

2. **How AI technology is being incorporated into the valuation process.**

3. **The ethical implications of incorporating AI technology into the valuation process, including:**

    a. **Bias in Data and Algorithms:**
    - **Challenge:** AI systems can inherit biases present in training data, leading to biased predictions and decisions.
    - **Impact on Valuation:** Biased data can skew the valuation process, resulting in lack of trust in the valuation methodologies and the AI technologies being assessed, including inaccurate assessments, lack of trust in the valuation methodologies, and the AI technologies being assessed.

    b. **Fairness and Equity:**
    - **Challenge:** Lack of fairness in AI systems can disproportionately impact certain groups, contributing to societal inequalities.
    - **Impact on Valuation:** Unfair AI practices can lead to reputational risks for companies, affecting their valuation. Investors may consider the ethical implications when assessing the long-term viability of AI-driven solutions.

c. Transparency and Explainability:

- **Challenge:** Many AI algorithms operate as "black boxes," making it difficult to understand their decision-making processes.
- **Impact on Valuation:** Lack of transparency can create uncertainty for investors and stakeholders, potentially leading to a lack of trust in the valuation methodologies and the AI technologies being assessed.

d. Privacy Concerns:

- **Challenge:** AI systems often rely on large datasets that may contain sensitive or personal information.
- **Impact on Valuation:** Privacy concerns can lead to legal and regulatory challenges, affecting how AI is used in the valuation process.

e. Security Risks:

- **Challenge:** AI systems can be vulnerable to attacks, and malicious use of AI can pose security risks.
- **Impact on Valuation:** Security vulnerabilities can significantly impact the use of AI technologies in the valuation process.

f. Responsible AI Development:

- **Challenge:** Failure to adopt responsible AI development practices may result in unintended consequences.
- **Impact on Valuation:** AI technologies are only as good as the data on which they are trained. Companies that prioritize responsible AI practices may be seen as more sustainable and trustworthy and less prone to ethical controversies, positively influencing valuation. We will explore ways to encourage responsible AI development practices that prioritize ethical considerations from the outset.

4. The ethical implications of and requirements when incorporating AI technology into expert reports focused on valuation, including:

a. Notifications of use of AI in detail (*e.g.*, must experts and attorneys review and confirm the accuracy of the work done by AI in the report);

b. Inherent obligation of attorneys to be competent in new technologies and make use of them in ways that benefit their clients; and

c. Obligations of attorneys to review filings with the courts and raises concerns over the ethical implications of AI use in expert reports, declarations, and testimony.

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Ethical Considerations When Using AI in Valuations

The Panel

- **Hon. Lisa G. Beckerman**
  - Bankruptcy Judge, United States Bankruptcy Court for the Southern District of New York.
- **Jordana L. Renert**
  - Partner in Lowenstein Sandler's Bankruptcy & Restructuring Department in the firm's New York office, focusing on financial restructuring, corporate trust matters, and workout proceedings on behalf of financially distressed companies or their creditors.
- **Boris J. Steffen**
  - Managing Director with Province Inc., with over 30 years of experience as a financial advisor and expert witness to holders of interests and claims on matters of accounting, finance, valuation and solvency, and has consulted in over $100 billion of mergers, acquisitions and restructurings.
- **Jackson D. Toof – Moderator**
  - Partner in ArentFox Schiff's Complex Litigation and Bankruptcy & Financial Restructuring Group in the firm's Washington, DC office, focusing on litigating all aspects of bankruptcy and financial services litigation, as well as international customs and trade litigation, *qui tam* defense actions, trade secret litigation, and other business and commercial disputes.

Objectives

- Understanding how AI technologies may be used in the valuation process.
- Understanding ethical implications and considerations of incorporating AI technology into the valuation process.
  - Hallucinations and Misinformation.
  - Bias in Data and Algorithms.
  - Fairness and Impartiality.
  - Attribution Errors.
  - Transparency and Explainability.
  - Privacy Concerns.
  - Safety and Security Risks.
- Understanding ethical implications of and requirements when incorporating AI technology (specifically, Generative AI) into court filings, including legal briefs and expert reports focused on valuation.

Overview of AI Technology

Overview of AI Technology

- Artificial Intelligence (AI) is revolutionizing industries by simulating human intelligence in machines. It encompasses a range of technologies and techniques that enable computers to perform tasks that typically require human cognitive functions.
- AI has become an essential tool across sectors, driving efficiency, accuracy, and innovation. From healthcare diagnostics to financial analysis to the legal sector, AI's impact is profound.
- **Predictive AI** and **Generative AI** are two branches of AI that serve distinct purposes.
  - **Generative AI** focuses on creating new content, while **Predictive AI** leverages historical data to forecast future outcomes. These technologies harness machine learning algorithms and deep learning to achieve their respective goals.

Overview of AI Technology (cont.)

- **Traditional AI**, on the other hand, is everywhere and has been around for some time now.
- **Traditional AI**, sometimes referred to as Narrow or Weak AI, or OG AI, focuses on performing a specific task intelligently. It refers to systems designed to respond to a particular set of inputs.
  - ❖ These systems have the capability to learn from data and make decisions or predictions based on that data. Imagine you're playing computer chess. The computer knows all the rules; it can predict your moves and make its own based on a pre-defined strategy.
    - ➢ It's not inventing new ways to play chess but selecting from strategies it was programmed with. That's **traditional AI** – it's like a master strategist who can make smart decisions within a specific set of rules.
  - ❖ Other examples of **traditional AIs** are voice assistants like Siri or Alexa, recommendation engines on Netflix or Amazon, or Google's search algorithm, or curated playlists in YouTube, Spotify, etc. These AIs have been trained to follow specific rules, do a particular job, and do it well, but they don't create anything new.

Overview of AI Tech – Generative AI

- **Generative AI** refers to a type of artificial intelligence that involves training models to create (generate) original content. These models learn patterns from existing data and generate new data based on those patterns.
  - ❖ In the context of images, text, or even music, **generative AI** tools produce outputs that are not directly copied from the training data but rather are unique creations inspired by the patterns it has learned.
  - ❖ One popular example of **Generative AI** is **ChatGPT**, which is a specific implementation of **Generative AI**. GPT stands for "General Pre-trained Transformer."

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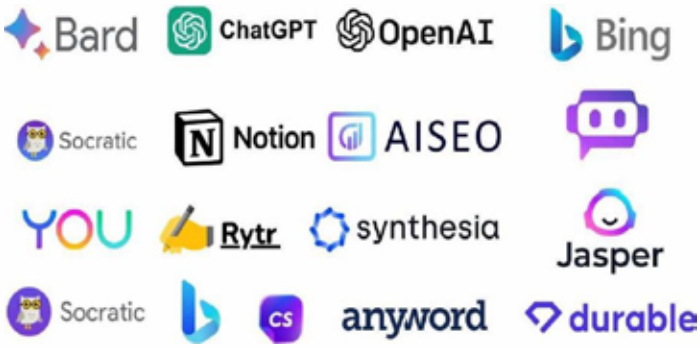
Overview of AI Tech – Generative AI (cont.)

- Emerging Landscape of **Generative AI** tools

ChatGPT, a chatbot developed by **OpenAI**, was recently recognized as the fastest-growing consumer application in internet history, acquiring 100 million users between December 2022 and January 2023.



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Overview of AI Tech – Predictive AI

- **Predictive AI**, also known as predictive analytics, is a subset of AI technology that focuses on using historical data and machine learning algorithms to analyze patterns and make predictions about future events or trends.
  - ❖ This type of AI technology aims to help companies and individuals make informed decisions by forecasting likely outcomes based on available data.
- **Predictive AI** is focused on training machine learning algorithms on historical data to identify patterns, relationships, and trends. These models use the insights gained from the training data to make predictions about future occurrences.
  - ❖ For example, **Predictive AI** can be used in various industries, such as finance and marketing, to forecast customer behavior, stock market trends, or product demand. By analyzing large datasets and applying sophisticated algorithms, **Predictive AI** aims to provide valuable insights and improve decision-making processes.

Overview of AI Tech – Key Differences

- **Generative AI** is primarily focused on creating new content, such as images, videos, music, or text. Its goal is to **generate** novel and creative outputs that mimic human-like patterns.
- In contrast, **Predictive AI** aims to make predictions about future events based on historical data. Its primary purpose is to **analyze** patterns in data to forecast potential outcomes or trends.
- **Generative AI** requires an initial input to start the creative process, such as a prompt, seed, or example. It then generates new content based on this input.
- On the other hand, **Predictive AI** relies on historical data as input to make predictions.

Overview of Traditional Valuation Models

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Overview of Traditional Valuation Methods

- Company valuation, also known as business valuation, is the process of assessing the total economic value of a business and its assets. During this process, all aspects of a business are evaluated to determine the current worth of an organization or department.
  - ❖ The valuation process takes place for a variety of reasons, such as determining solvency in fraudulent and preferential transfers, reorganization value in plan confirmation, and fair value in appraisals.
- We are going to look briefly at four business valuation methods that provide insight into a company's financial standing, including:
  1. Discounted Cash Flow ("DFC") analysis,
  2. Comparable Public Company analysis,
  3. Comparable Transaction analysis, and
  4. Adjusted book value.

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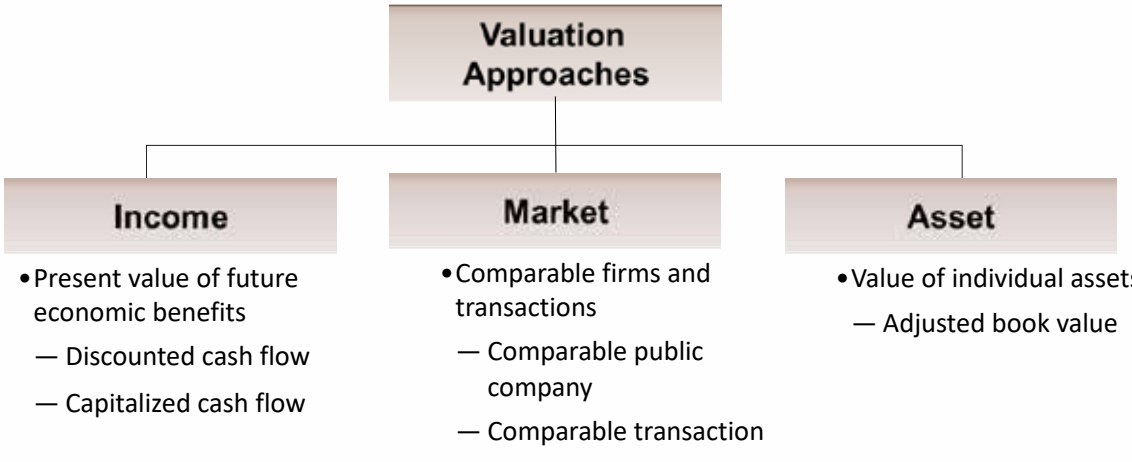
The value of an asset may be estimated using the income, market, or asset approach.



The DCF method is used to derive an indication of value based on the present value of expected future cash flows.

Under the DCF method, the value of a firm is equal to the present value of its expected future unlevered free cash flows, based on industry, firm-specific, and macroeconomic fundamentals, discounted to present value using a risk-adjusted discount rate

The first step in the DCF method is to calculate the cash flows for each year of the period projected

The value of the subject firm attributable to its cash flows in the post-projection period is then estimated to derive a terminal value

The cash flows over the discrete projection period and the terminal value are then discounted to the valuation date to calculate value

The comparable public company method is used to derive an indication of fair value based on market multiples of comparable publicly traded firms.

The comparable public company method looks to the public market for evidence of prices investors are willing to pay for companies having investment characteristics comparable to the firm being valued

The first step is to identify publicly traded firms comparable to the subject firm

Appropriate market-based pricing multiples are then calculated from the comparable public company trading prices and earnings measures, which serve as proxies for cash flow, adjusting for differences with the subject firm

The market-based pricing multiples from the comparable public companies are then applied to the earnings measures of the subject firm to calculate fair value

The comparable transaction method is used to derive an indication of fair value based on market multiples from mergers and acquisitions of comparable firms.

The comparable transaction method uses prices from the sale of controlling interests in the merger market, which can include the entire capital structure, and reflect publicly traded and privately held firms

The first step is to identify comparable guideline mergers and acquisitions

Appropriate market-based pricing multiples are then calculated from the comparable transaction prices and earnings measures, adjusting for differences with the subject firm, and for economic and industry conditions between the date of the transaction and valuation

The market-based pricing multiples from the comparable transactions are then applied to the earnings measures of the subject firm to calculate value

The adjusted book value is used to derive an indication of fair value based on the values of each individual asset.

Used to value asset-intensive firms, investment and real estate holding companies, and operating companies where expected cash flow is not sufficient to generate the returns required on tangible assets

The first step in the adjusted book value method is to obtain a GAAP-based balance sheet dated on or as close as possible to the valuation date

Next, actual or contingent off-balance sheet assets and liabilities are identified

Each asset and liability is then analyzed and revalued or valued as necessary, recognizing a deferred tax liability for the built-in gain on appreciated assets

A market-value based balance sheet is then constructed using the restated values, with the net of the assets and liabilities equal to the market value of the equity

Using AI in Business Valuations & Attendant Ethical Implications and Considerations

Estimating Business Valuation - Predictive AI

- **Enhancing Accuracy and Precision**
  - ❖ One of the key contributions of **Predictive AI** in valuation is its ability to analyze vast amounts of data with speed and precision. Machine learning algorithms can consider numerous variables that humans might overlook, leading to more accurate valuations.
- **Predicting Market Trends**
  - ❖ **Predictive AI** doesn't just stop at assessing current values; it can aid in predicting future market trends. By analyzing historical and current market data, AI algorithms can identify patterns and forecast potential changes in values.
- **Streamlining the Valuation Process**
  - ❖ The traditional valuation process often involves time-consuming site visits, data collection, and/or manual analysis. **Predictive AI** can streamline this process by automating data collection and analysis, reducing the time required for conduct valuations. This efficiency not only saves time but could also minimize the chances of human error, resulting in more reliable valuations. Of course, the opposite could be true as well.

Estimating Business Valuation – Generative AI

- In this video, ChatGPT is used to estimate the value of a business.
- You will see how **Generative AI** can take a set of numbers and provide an estimated business valuation; here, using three methods: discounted cash flow, multiple of earnings, and book value.
  - ❖ https://www.youtube.com/watch?v=qlCwN0Kqbpk

Estimating Business Valuation – Generative AI (cont.)

- The video shown is just one example, *and a pretty basic one at that*, of using **Gen AI** to help prepare a business valuation.
- Consider it from the perspective of preparing an expert report on a distressed business valuation.
  - ❖ **Gen AI** example (ChatGPT demo).
- What are some of the ethical issues in using **Generative AI** or even **Predictive AI** to help prepare valuations?
- Keep in mind – there are currently no global AI regulations or even just regulations in the United States to address ethical concerns.

Hallucinations and Misinformation

- A **Generative AI** model references its dataset to concoct coherent language or images, which is part of what has enamored and enticed early users (not just HS or college students who are also now relying on it for writing papers and answering questions).
- With natural language programs, while the phrasing and grammar may be convincing, the substance may well be partially to entirely inaccurate, or sometimes, when representing a statement of validity, false.
- One of the risks with this kind of natural language application is that it can "hallucinate" an inaccurate output in complete confidence. It can even invent references and sources that are non-existent.
  - ❖ In other words, this refers to GAI output that is plainly wrong, outlandish, or made up.
  - ❖ We will discuss later a case involving this phenomenon.
- The model would be forgiven as its function is to generate digital artifacts that look like human artifacts. Yet, coherent data and valid data are not necessarily the same, leaving end users like us of large language models to contend with whether the eloquent, well written output is factually valuable at all.

Hallucinations and Misinformation (cont.)

- This can happen because (among other reasons):
  - ❖ **The underlying LLM does not contain relevant or correct features** (usually because the underlying data are wrong, skewed or missing) or
  - ❖ **A human asked the model a bad question** ('why is the Earth flat?') or
  - ❖ **The tool was used beyond its recommended tolerances** (*e.g.*, for extended chats) or
  - ❖ **The model does not care if what it says is true**. Its definition of what is a "valid" output is the one with the most positive correlations between what it is trained on and what it is doing (so flooding the zone with errors makes errors more likely to become outputs).

Bias in Data and Algorithms / Data Integrity

- There is also the risk of inherent bias within these models, owing to the data on which they are trained.
- No single company can create and curate all of the training data needed for a **Generative AI** model because the necessary data is so expansive and voluminous, measured in tens of terabytes.
- Another approach then is to train the model using publicly available data, which injects the risk of latent bias and therefore the potential for bias in the AI outputs.
- A fundamental risk is that users may place complete confidence in erroneous or biased outputs and make decisions and take actions based on a falsehood.
  - ❖ One way to help mitigate this risk is through proper AI governance.

Bias in Data and Algorithms / Data Integrity (cont.)

- AI systems are highly reliant on the quality of input data they receive. If the input data contains biases, such as gender, racial, or ideological biases, or if the datasets are incomplete or unrepresentative, it can hinder the objectivity of AI.
- Another challenge lies in the uncertainty surrounding how input data is utilized. In some cases, AI training methods may obscure the decision-making process, potentially leading to discriminatory outcomes, such as the use of race or gender data in credit or insurance assessments.
- During the development phase, AI systems are often trained using specific data, which can perpetuate biases, creating an ongoing cycle. Subconscious bias or a lack of diversity among development teams can also influence the training process, thereby perpetuating bias within the AI model.
- After the training phase, AI systems continue to learn and improve through continuous learning. This process can inadvertently lead to the acquisition of new behaviors that have unintended consequences.
  - ❖ For instance, an online lending platform may start disproportionately rejecting loan applications from certain ethnic minority groups, causing a breakdown of trust between financial institutions, humans, and machines.
  - ❖ Or in the case of valuations, a model may start artificially inflating or reducing valuations of businesses in certain geographic locations, or owned by certain ethnic groups, or make a certain type of product, etc.

Fairness and Impartiality

- With data that is potentially biased, there is a tradeoff for the algorithm. It can be highly accurate in operation, relative to the data, but it can lead to unjust outcomes.
- An algorithm used within an AI tool is a powerful and complex computation whose result informs human decision making; however, it cannot and should not replace the essential judgment of deciding what is fair or impartial in the context of what the end user is seeking and to what degree the application the AI outputs can or should be trusted to be fair.
- Although AI solutions should be designed to reduce or eliminate bias against individuals, communities, and groups, the concept of "fairness" takes on more or less importance depending on the end use:
  - ❖ For example: Fairness is likely a less important tool or concept for valuing distressed companies, whereas it would be vitally important in cases where the tool directly impacts people's lives (*e.g.*, providing equal access to loans, insurance, social services, educations opportunities, etc.).

Attribution Errors

- Gen AI outputs align with the original training data, and that information came from the real world, where – as most, if not all, of us in this room appreciate – things like attribution and copyright are important and legally cognizable.
- Data sets can include information from online encyclopedias, digitized books, and customer reviews, as well as curated data sets. Even if a model does cite accurate source information, it may still present outputs that obscure attribution or even tread across lines of plagiarism and copyright and trademark violations.
- To the extent you are relying on Generative AI to prepare portions of your valuations, especially the narrative portions, diligencing any and all citations and source references is paramount.

Attribution Errors (cont.)

- Gen AI is a tool designed to mimic human creativity by parroting back something drawn from the data it computes. Everything that is spit back is derived from sources in some way, so do not lose sight of attribution in the responses given.
  - ❖ For example, if a large language model like ChatGPT outputs plagiarized content and you use that in your valuation report or expert report, for example, you are accountable when the plagiarism is discovered, not the Generative AI tool.
  - ❖ Of course, it's easy to see how human fact-checking of AI attribution could then become a very time-intensive and otherwise laborious process, which would in turn cut into the perceived gain in productivity by using the AI tool.
  - ❖ It is clear that finding the balance between trusting the attribution coming out of Gen AI tools and oversight by people will be an ongoing challenge.

Transparency and Explainability / Interpretability

- End users, like many of us here in the room, include people who have limited understanding of AI generally, much less the complicated workings of large language models.
- The lack of a technical understanding of Generative AI does not absolve an organization from focusing on transparency and explainability. If anything, it makes it that much more important.
- As you may have seen using ChatGPT, today's Generative AI models often come with a disclaimer that "**the outputs may be inaccurate**" or other similar qualifying disclaimer.
  - ❖ That may seem like transparency, but the reality is many end users do not read the terms and conditions, they do not understand how the technology works, and because of those factors, the large language model's explainability suffers.

Transparency and Explainability / Interpretability (cont.)

- To participate in risk management and ethical decision making, users should have accessible, non-technical explanations of Generative AI, its limits and capabilities, and the risks it creates.
- Company-wide AI literacy and risk awareness is becoming an essential aspect of any company's day-to-day operations. Business users should have a real understanding of Generative AI because it is the end users like us (not necessarily the AI engineers and data scientists) who contend with the risks and the consequences of trusting a Gen AI tool, regardless of whether we should.
- To promote the necessary AI understanding, CIOs and other business leaders or firm managing partners may look to existing workforce training and learning sessions, explanatory presentations to end users, and fostering a culture of continuous learning.

Privacy Concerns

- Gen AI applications could exacerbate data and privacy risks, considering that the notion underpinning large language models is that they use a massive amount of data and create even more new data, which are vulnerable to bias, poor quality, unauthorized access and loss.
- Entering sensitive data into public Generative AI models is already a significant problem for some companies and law firms.
  - ❖ Examples (law firms using only in-house tools).
- Gen AI, which may store input information indefinitely and use it to train other models, could contravene privacy regulations that restrict secondary uses of personal data.

Safety and Security Risks

- These ethical considerations may not be as applicable here today as some of the others, but we wanted to note them for consideration.
- AI solutions should be designed and implemented to safeguard against harm to people, businesses, and property.
- Robust and resilient practices should be implemented to safeguard AI solutions against bad actors, misinformation, or adverse events.
- Consider whether the AI system you are using is vulnerable to attacks (external, internal, physical, digital, etc.).
- Consider what internal risks of fraud and abuse may corrupt the data or model you are using.

Legal and Ethical Issues Arising with the Use of Artificial Intelligence in connection with Court Filings and Valuation Expert Reports Presented to Courts

The Balancing Act

- How our nation's court system regards and rules on issues involving **Generative AI** and the ethical questions it raises requires a delicate balance between the benefits of the technology and the legal/ethical obligations to which users and practitioners have to adhere.
- As a part of the judicial process, each jurisdiction makes its own rules and regulations covering how attorneys and parties present their concerns before the court.
- The development of **Generative AI** at lightning speed over the last 12-24 months has made it necessary for courts to address the proverbial elephant in the room — what is the ethics and legality of AI-created work product, especially in a legal setting?

The Balancing Act (cont.)

- Not surprisingly, individual courts are attempting to prevent such issues in the future.
- Across the country, attorneys are required to provide competent representation to their clients, which includes awareness of the benefits and risks associated with new and relevant technology.
  - **MPC Rule 1.1**: "A lawyer shall provide competent representation to a client. Competent representation requires the legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation."
  - This means that attorneys cannot simply bury their heads in the sand and act as though new technology does not exist or assume it has no benefits for their clients. On the other hand, it would be problematic to use this powerful technology without fully understanding the benefits and risks.

The Balancing Act (cont.)

- Many law firms already are warning their attorneys about the use of Gen AI in a professional capacity.
- According to a recent Thomson Reuters Institute survey report on Gen AI use among law firms:
  - 15% of law firm respondents said their firms have issued a warning around Generative AI or ChatGPT usage at work, including 21% at large law firms and 11% at Midsize law firms.
  - Two-thirds (66%) indicated they had not received such warnings, and
  - 19% said they did not know whether or not their firm had issued a warning.
- According to Thompson Reuter's second annual "State of the Courts Report" dated February 21, 2024, judges and court professionals are giving a lot of thought to Gen AI and other technology as they seek to find ways to better serve the public. [https://www.thomsonreuters.com/en-us/posts/government/state-of-the-courts-report-2024/]
  - "As generative artificial intelligence (Gen AI) gripped the rest of the word, the nation's courts spent much of last year seeking to find a place for this rapidly advancing technology. The courts at this stage are more philosophical than practical, and the discussion among professionals surrounds whether there is enough knowledge about Gen AI to decide how it can be used in courts or whether it should be at all."
  - "**U.S. Supreme Court Chief Justice Roberts** even addressed the presence of AI in the legal field, noting that while he didn't see AI taking over the role of judges, he did see it significantly impacting the legal community. At this point, it is clear that there is some uncertainty about usage, and that attitude is coming from the top down."
- Beyond that, attorneys must be aware of the position the court or jurisdiction they are in has taken on use of such technology.

AI Used by Attorneys in Preparation of Court Filings

- This issue has been the subject of various rulings by various courts.
- The problem arises when attorneys use Gen AI to prepare briefs and other pleadings and then, the pleading cites to cases that do not exist as precedent. This has occurred recently in a number of cases before the Courts.
- ***Mata v. Avianca, Inc.*, Case No. 22-cv-1461 (PKC) (SDNY)**.
  - The case involved a lawyer who submitted filings to the court using Gen AI to create documents, which were found to have incorrect and even imaginary case citations and opinions.
  - The case highlights the importance of counsel properly reviewing filings with the court and raises concerns over the ethical implications of using Gen AI in this way.

AI Used by Attorneys in Preparation of Court Filings (cont.)

- ***Mata v. Avianca, Inc.*, Case No. 22-cv-1461 (PKC) (SDNY)**.
  - Judge P. Kevin Castel found "bad faith on the part of the individual [attorneys] based upon acts of conscious avoidance and false and misleading statements to the Court." Further, the Court stated that "existing rules impose a gatekeeping role on attorneys to ensure the accuracy of their filings," and the attorneys and their law firm "abandoned their responsibilities when they submitted non-existent judicial opinions with fake quotes and citations created by the artificial intelligence tool ChatGPT."
  - The Court pointed to several provisions to support the imposition of sanctions on the attorneys. First, "[u]nder Rule 11, a court may sanction an attorney for, among other things, mispresenting facts or making frivolous legal arguments." Citing *Muhammad v. Walmart Stores East, L.P.*, 732 F.3d 104, 108 (2d Cir. 2013) (per curiam). Further, "[t]he filing of papers 'without taking the necessary care in their preparation is an abuse of the judicial system' that is subject to Rule 11 sanctions." Citing *Cooter & Gell v. Hartmax Corp.*, 496 U.S. 384, 398 (1990). Lastly, "Rule 3.3(a)(1) of the New York Rules of Professional Conduct, 22 N.Y.C.R.R. § 1200.0, states: 'A lawyer shall not knowingly make a false statement of fact or law to a tribunal or fail to correct a false statement of material fact or law previously made to the tribunal by the lawyer.'"
  - Furthermore, Judge Castel opined on the"[m]any harms [that] flow from the submission of fake opinions," such as "[t]he opposing party wast[ing] time and money in exposing the deception." Additionally, "[t]he client may be deprived of arguments based on authentic judicial precedents."
  - Lastly, Judge Castel stated that incidents like these could cause "potential harm to the reputation of the judges and courts," and the legal profession as a whole.

AI Used by Attorneys in Preparation of Court Filings (cont.)

- In ***Park v. Kim*, 2024 WL 332478 (2nd Cir. Jan. 30, 2024)**, the Court was unable to locate a case to which Attorney Lee cited in the reply brief. The Court ordered Ms. Lee to submit a copy of the decision. However, Ms. Lee was unable to do so because the case appeared to be "non-existent." The attorney explained that she utilized ChatGPT to assist in providing relevant information for the brief, which included the non-existent case citation.
  - The Court cited to Rule 11, and reasoned that under this rule, attorneys are required to "read, and thereby confirm the existence and validity of, the legal authorities on which they rely."
  - The Court held that "Attorney Lee's submission of a brief relying on non-existent authority reveals that she failed to determine that the argument she made was legally tenable."
  - Further, the Court explained that the brief presented a false statement of law to the Court, and Ms. Lee did not make a reasonable inquiry, as required by Rule 11, as to the validity of the arguments she presented. Therefore, the Court referred Ms. Lee to the Court's Grievance Panel for further investigation.

AI Used by Attorneys in Preparation of Court Filings (cont.)

- In ***McComb v. Best Buy Inc.*, 2024 WL 181857 (S.D. Ohio Jan. 17, 2024)**, the Court issued an opinion in which it "remind[ed] all parties that they are not allowed to use AI – for any purpose – to prepare any filings in the instant case or any case before the [Court]."
  - ❖ As such, "[b]oth parties and their respective counsel, have an obligation to immediately inform the Court if they discover that a party has used AI to prepare any filings." Additionally, "[t]he penalty for violating this provision, includes, inter alia, striking the pleading from the record, the imposition of economic sanctions and contempt, and dismissal of the lawsuit."

AI Used by Attorneys in Preparation of Court Filings (cont.)

- Several federal judges, including those in Texas, Illinois, New York, Pennsylvania, and the Court of International Trade, have issued rulings or standing orders on the use of Gen AI in their courtrooms. Depending on the jurisdiction and the specific judge, attorneys and *pro se* litigants may have to disclose to the court whether or not they used AI in drafting their pleadings.
  - ❖ In several of the orders, the judge makes clear that, even if the attorney chooses to utilize AI, the attorney is still subject to Rule 11.
- Each places the onus on the attorney to notify the court of their use of Gen AI in detail. The courts also require that the attorney review and confirm the accuracy of the work done by Gen AI.
- **Judge Brantley Starr** of the U.S. District Court for the Northern District of Texas issued the first judicial standing order on AI.
  - ❖ The order requires litigants in his court to file a certificate attesting either that no Generative AI will be used in filings or that any Generative AI use will be "checked for accuracy ... by a human being."
  - ❖ Judge Starr says the certificate is necessary because generative AI is "prone to hallucinations and bias."

The First AI Order

- Judge Brantley Starr's "**Mandatory Certification Regarding Generative Artificial Intelligence**":
  - "All attorneys and pro se litigants appearing before the Court must, together with their notice of appearance, file on the docket a certificate attesting either that no portion of any filing will be drafted by generative artificial intelligence (such as ChatGPT, Harvey.AI, or Google Bard) or that any language drafted by generative artificial intelligence will be checked for accuracy, using print reporters or traditional legal databases, by a human being. These platforms are incredibly powerful and have many uses in the law: form divorces, discovery requests, suggested errors in documents, anticipated questions at oral argument. But legal briefing is not one of them. Here's why. These platforms in their current states are prone to hallucinations and bias. On hallucinations, they make stuff up—even quotes and citations. Another issue is reliability or bias. While attorneys swear an oath to set aside their personal prejudices, biases, and beliefs to faithfully uphold the law and represent their clients, generative artificial intelligence is the product of programming devised by humans who did not have to swear such an oath. As such, these systems hold no allegiance to any client, the rule of law, or the laws and Constitution of the United States (or, as addressed above, the truth). Unbound by any sense of duty, honor, or justice, such programs act according to computer code rather than conviction, based on programming rather than principle. Any party believing a platform has the requisite accuracy and reliability for legal briefing may move for leave and explain why. Accordingly, the Court will strike any filing from a party who fails to file a certificate on the docket attesting that they have read the Court's judge-specific requirements and understand that they will be held responsible under Rule 11 for the contents of any filing that they sign and submit to the Court, regardless of whether generative artificial intelligence drafted any portion of that filing. **A template Certificate Regarding Judge-Specific Requirements is provided here.** (https://www.txnd.uscourts.gov/judge/judge-brantley-starr)

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

PARTY,
Plaintiff,
v.
PARTY,
Defendant.

CASE NUMBER

CERTIFICATE REGARDING JUDGE-SPECIFIC REQUIREMENTS

I, the undersigned attorney, hereby certify that I have read and will comply with all judge-specific requirements for Judge Brantley Starr, United States District Judge for the Northern District of Texas.

I further certify that no portion of any filing in this case will be drafted by generative artificial intelligence or that any language drafted by generative artificial intelligence—including quotations, citations, paraphrased assertions, and legal analysis—will be checked for accuracy, using print reporters or traditional legal databases, by a human being before it is submitted to the Court. I understand that any attorney who signs any filing in this case will be held responsible for the contents thereof according to applicable rules of attorney discipline, regardless of whether generative artificial intelligence drafted any portion of that filing.

ATTORNEY NAME(S)

AI Used by Attorneys in Preparation of Court Filings (cont.)

- Other judges quickly followed suit. Orders by three judges—Judge Stephen Vaden of the Court of International Trade, Magistrate Judge Gabriel Fuentes of the Northern District of Illinois, and Senior District Judge Michael Baylson of the Eastern District of Pennsylvania—received national attention. And each judge put their own spin on Starr's prototype. For example:
  - ❖ Judge Vaden's standing order focuses on confidentiality, requiring litigants to expressly disclose use of generative AI and file a certificate attesting that such use didn't disclose proprietary information to unauthorized parties.
  - ❖ Judge Fuentes' order also requires litigants to disclose the use of Generative AI but has no certificate requirement. Instead, to safeguard accuracy, Judge Fuentes relies on Fed. R. Civ. P. 11, which requires arguments in a filing to be "warranted by existing law" and provides sanctions for noncompliance.
  - ❖ Judge Baylson's standing order mandates disclosure of ***any use of AI***—generative or not—and requires litigants using AI to certify that citations in a filing are "verified as accurate." Two former federal judges noted that Judge Baylson's order, by its broad terms, "directs counsel to reveal the use of seemingly innocuous programs like Grammarly."

AI Used by Attorneys in Preparation of Court Filings (cont.)

- Judge Vaden's "**Order on Artificial Intelligence**" requires attorneys to certify that confidential information was not disseminated to any unauthorized party, and that attorneys must outline each section that uses Generative AI:
  - ❖ "ORDERED that any submission in a case assigned to Judge Vaden that contains text drafted with the assistance of a generative artificial intelligence program on the basis of natural language prompts, including but not limited to ChatGPT and Google Bard, must be accompanied by:

    (1) A disclosure notice that identifies the program used and the specific portions of text that have been so drafted;

    (2) A certification that the use of such program has not resulted in the disclosure of any confidential or business proprietary information to any unauthorized party;"

AI Used by Attorneys in Preparation of Court Filings (cont)

- Magistrate Judge Gabriel A. Fuentes (Northern District of Illinois) has included, in her Standing Order for Civil Cases that are before her, the following:
  - The Court has adopted a new requirement in the fast-growing and fast-changing area of generative artificial intelligence ("AI") and its use in the practice of law. The requirement is as follows: Any party using any generative AI tool to conduct legal research or to draft documents for filing with the Court must disclose in the filing that AI was used, with the disclosure including the specific AI tool and the manner in which it was used. Further, Rule 11 of the Federal Rules of Civil Procedure continues to apply, and the Court will continue to construe all filings as a certification, by the person signing the filed document and after reasonable inquiry, of the matters set forth in the rule, including but not limited to those in Rule 11(b)(2). Parties should not assume that mere reliance on an AI tool will be presumed to constitute reasonable inquiry, because, to quote a phrase, "I'm sorry, Dave, I'm afraid I can't do that …. This mission is too important for me to allow you to jeopardize it." 2001: A SPACE ODYSSEY (Metro Goldwyn-Mayer 1968).

  - **One way to jeopardize the mission of federal courts is to use an AI tool to generate legal research that includes "bogus judicial decisions" cited for substantive propositions of law**. *See Mata v. Avianca, Inc.*, No. 22-cv-1461 (PKC), Order to Show Cause (S.D.N.Y. May 4, 2023) (issuing rule to show cause where "[a] submission filed by plaintiff's counsel in opposition to a motion to dismiss is replete with citations to nonexistent cases.") (D.E. 31); *Id.*, Attorney Affidavit (D.E. 32-1) (S.D.N.Y. May 25, 2023) (responding to rule to show cause order by stating that the case authorities found by the district court to be nonexistent "were provided by Chat GPT which also provided its legal source and assured the reliability of its content."). Just as the Court did before the advent of AI as a tool for legal research and drafting, the Court will continue to presume that the Rule 11 certification is a representation by filers, as living, breathing, thinking human beings, that they themselves have read and analyzed all cited authorities to ensure that such authorities actually exist and that the filings comply with Rule 11(b)(2). *See* Hon. Brantley Starr, "Mandatory Certification Regarding Generative Artificial Intelligence [Standing Order]," (N.D. Tex.) ("While attorneys swear an oath to set aside their personal prejudices, biases, and beliefs to faithfully uphold the law and represent their clients, generative artificial intelligence is the product of programming devised by humans who did not have to swear such an oath. As such, these systems hold no allegiance to any client, the rule of law, or the laws and Constitution of the United States (or, as addressed above, the truth.")) (www.txnd.uscourts.gov/judge/judge brantley-starr) (last visited May 31, 2023).

AI Used by Attorneys in Preparation of Court Filings (cont)

- More recently, Judge Arun Subramanian of the Southern District of New York has added a section to his "Individual Practices in Civil Cases" order:
  - Section 8(f): "**Use of ChatGPT and Other Tools**. Counsel is responsible for providing the Court with complete and accurate representations of the record, the procedural history of the case, and any cited legal authorities. Use of ChatGPT or other such tools is not prohibited, but counsel must at all times personally confirm for themselves the accuracy of any research conducted by these means. At all times, counsel—and specifically designated Lead Trial Counsel—bears responsibility for any filings made by the party that counsel represents." (https://www.nysd.uscourts.gov/sites/default/files/practice_documents/AS%20Subramanian%20Civil%20Individual%20Practices.pdf)
- In a minimally restrictive fashion, Judge Subramanian simply reminds lawyers that they are ultimately responsible for the veracity and accuracy of their filings. (This is not unlike reminding senior lawyers that they need to review and check the work of their junior associates.)
- Contrast this with Judge Baylson's order, which does not differentiate between traditional and generative AI, and if that order is read strictly, it could put significant burdens on lawyers appearing in his court, especially those without a technical background.

AI Used by Attorneys in Preparation of Court Filings (cont.)

- The majority of courts, attorneys, and other firms have yet to come to a conclusion as to how to actively and properly use Generative AI technologies.
- It is clear that more discussion is needed to help balance the individual attorney's obligations to their clients — especially around privacy, competency, and fiscal responsibility — and their ethical and other obligations to comply with local court rulings.

AI Used in Preparation of Expert Reports

- None of the standing orders explicitly govern the use of AI in expert reports.
- Most standing orders, however, seem to mainly contemplate legal briefs and other written attorney work product.
- Some of the general language in the standing orders on AI could be construed to include those types of exhibits and filings, such as valuation expert reports, especially the Northern District of California Standing Order issued by **Magistrate Judge Peter Kang**.
  - ❖ Section VII (Motions), sub. C:
  - ❖ **Artificial Intelligence (AI) and Filings with the Court**.
    - ➢ **AI and Briefs/Pleadings Filed with the Court**.
    - ➢ **AI and Evidence**.
    - ➢ **AI and Confidentiality**.

AI Used in Preparation of Expert Reports (cont.)

- **Artificial Intelligence (AI) and Filings with the Court**:
  - ❖ "The Court is aware of recent developments regarding generative AI and its impact on litigation. Accordingly, the Court provides the following guidance for parties and their counsel in this evolving area. If parties have specific proposals for modifying, adding to, or addressing AI-related issues in their matter, counsel are encouraged and expected to raise such proposals as part of the case management procedures above and as appropriate during the progress of an action."
  - ❖ "AI and specifically generative AI (as referred to herein) denote a category of automated tools that are capable of formulating unique content, such as text that has not been expressly programmed into the computer system at issue. Generative AI is thus distinguishable from other categories of AI, which may operate based on pre-established algorithms and, of particular relevance to the administration of justice, do not generate original content or text. The Court recognizes that generative AI, AI tools, and the applications using such technology are evolving areas, with changing terminology and technical approaches. Therefore, these provisions are to be reasonably construed as these AI tools develop further, with the overarching purpose of the provisions in mind. At one end of the spectrum of available software tools, the provisions herein do not apply to the use of applications, solutions, or tools which implicate AI for tasks unrelated to or at best tangentially related to the practice of law and not involved in or responsible for the creation or drafting of text for submissions to the Court. For example, these provisions do not apply to counsel's use of software, applications, or vendors' offerings which may in some way incorporate a technology labeled as "AI" in performing law firm or lawyer administrative or ministerial tasks (*e.g.*, timekeeping, invoicing, HR, accounting, business development, and similar back office or business of law solutions). Nor do these provisions apply to counsel's or a pro se party's use of traditional legal research, word processing, spellchecking, grammar checking, or formatting software tools (*e.g.*, Lexis, Westlaw, Microsoft Word, or Adobe Acrobat)."

AI Used in Preparation of Expert Reports (cont.)

- **AI and Briefs/Pleadings Filed with the Court**:
  - ❖ "As a baseline matter, consistent with Federal Rule of Civil Procedure 11, the Court's Education Guidelines as set forth in ESI Guideline 3.01, and any other applicable legal or ethical guidelines, it is expected that counsel for the parties, including all counsel who have appeared, as well as all others responsible for making representations to the Court or opposing counsel (whether or not they make an appearance) and pro se parties, shall competently and responsibly use automated, computer-based software or hardware applications in drafting briefs, pleadings, or other documents to be submitted to the Court, whether such tools are labelled as AI, generative AI, language model, natural language processing tool, machine learning tool, artificial neural network, deep learning neural network, or any other automated generator of text."
  - ❖ "Any brief, pleading, or other document submitted to the Court the text of which was created or drafted with any use of an AI tool shall be identified as such in its title or pleading caption, in a table preceding the body text of such brief or pleading, or by a separate Notice filed contemporaneously with the brief, pleading, or document. Counsel shall maintain records sufficient to identify, if requested by the Court, those portions of the text of a pleading, brief, or document submitted to the Court which was created or drafted by an AI tool. Parties and counsel shall not file or otherwise present to the Court any briefs, pleadings, materials, other documents, or argument which contain AI-hallucinated citations to law, case or legal citations which are fictitious or nonexistent, or any uncorroboratable assertions of law or fact. A pro se party or a counsel's failure to confirm or double-check the accuracy, veracity, or even existence of a case or legal citation (or assertion of fact) created by an AI tool is grounds for potential sanctions."

AI Used in Preparation of Expert Reports (cont.)

- **AI and Evidence**:
  - ❖ "The Court recognizes that, as AI tools proliferate generally in society, there may arise situations in which AI generated documents or materials (for example, created by a Party prior to the commencement of litigation) are or may become exhibits, evidence, or the subject of factual disputes in an action. In such situations, a pro se party or counsel shall follow the procedures below with regard to proffering evidence, documents, or other factual material which that Party or counsel knows or has any reasonable basis to believe is or was created in whole by a generative AI or any AI tool for creating text, documents, images, video, graphics, audio, or any other material:

    1) If a Party or counsel seeks to file or otherwise present to the Court any such AI-generated evidentiary material, no such material shall be considered unless previously disclosed or produced timely in discovery (or, with respect to demonstrative exhibits, by the deadline for exchange or disclosure of demonstrative exhibits).

    2) Contemporaneous with the production or disclosure of any such AI-generated evidentiary material, counsel shall serve a Notice to the opposing Party or side identifying such material with sufficient specificity to locate it (such as by Bates or production number, by attaching a copy to such Notice, by promptly responding to any request for counsel to provide a copy of such material, or by any other means which reasonably permits the other Party or side to identify and locate the material promptly). Any such AI-generated material which does not have an accompanying Notice shall not be considered by the Court. Absent stipulation between the Parties or other order of the Court on scheduling, at the time of the submission or filing of any such material to the Court, the Party or counsel proffering such AI-generated material to the Court shall file and serve any declarations, affidavits, or sworn testimony to address the material's authenticity under the Federal Rules of Evidence."

AI Used in Preparation of Expert Reports (cont.)

- **AI and Evidence**:

  3) "If a Party or counsel chooses to use an AI or other automated tool as part of a process for creating exhibits, demonstratives, or other material to be filed or presented to the Court, they shall only do so consistent with their ethical and legal obligations and shall use such tools responsibly and with competent training, knowledge, and understanding of the limitations and risks of such automated tools. Parties and counsel shall not file, proffer, or otherwise present to the Court exhibits, demonstratives, or other evidentiary or factual material which contain AI-hallucinated assertions of fact, uncorroboratable statements as to factual matters or evidence, or any fictitious or non-existent references or citations to law or fact. A pro se party's or a counsel's failure to confirm or double-check the accuracy, veracity, or even existence of a basis for an assertion of fact or evidence created by an AI tool is grounds for potential sanctions. Any exhibit, demonstrative, or other material to be filed or presented to the Court which was created or drafted with any assistance or use of an AI tool shall be identified as such in its title or caption, in a table preceding the body of exhibit, demonstrative, or other material, or by a separate Notice filed contemporaneously with the document or material. Counsel shall maintain records sufficient to identify, if requested by the Court, those portions of that exhibit, document, or material created or drafted by use of an AI tool."

  [https://cand.uscourts.gov/wp-content/uploads/judges/kang-phk/Civil-Standing-Order-PHK-001.pdf]

AI Used in Preparation of Expert Reports (cont.)

- *In re Celsius* – featured a dispute over the value of CEL token. ***In re Celsius Network LLC*, 655 B.R. 301, 305 (Bankr. S.D.N.Y. 2023)**.
  - ❖ Pro se creditor Mr. Otis Davis objected to the pricing of CEL on petition date, claiming the value of the token should be at least $.81, or some higher amount. In disputing the value, Mr. Davis proffered his own valuation expert, Hussein Faraj. Mr. Faraj provided testimony as well as his own expert report.
  - ❖ Chief Judge Glenn, relying on Rule 702 of the Federal Rules of Evidence (incorporated via Rule 9017 of the Fed. Rules of Bankruptcy Procedure) based his analysis as to whether Mr. Faraj properly utilized AI in his valuation report on the following facts:
    - ➢ The Faraj report was not written by Faraj. Although he directed and guided its creation, the 172-page Report, **which was generated within 72 hours**, was written by AI at the instruction of Mr. Faraj. The synthesis of the report took 72 hours when a comprehensive human report would have taken over 1000 hours or 6-8 weeks.
    - ➢ The report was not based on sufficient facts or data. The report contains almost no citations to facts or data underlying the majority of methods, fact, and opinions set fourth therein.

AI Used in Preparation of Expert Reports (cont.)

- *In re Celsius* – featured a dispute over the value of CEL token. *In re Celsius Network LLC*, 655 B.R. 301, 305 (Bankr. S.D.N.Y. 2023).
  - ❖ Chief Judge Glenn, relying on Rule 702, based his analysis as to whether Mr. Faraj properly utilized AI in his valuation report on the following facts (***cont.***):
    - ➢ Faraj did not review the underlying source material for any sources cited, nor does he know what his team did (or did not do) to review and summarize those materials. The report contains no citations to the information on the CEL token itself, at times suggesting that it is important to consider features that the CEL Token never had, such as governance rights.
    - ➢ There were no standards controlling the operation of the AI which generated the report. The report contained numerous errors, ranging from duplicated paragraphs to mistakes in its description of the trading window selected for evaluation. Mr. Faraj even openly admitted to errors in the report at hearing.
    - ➢ Not the product of reliable peer-reviewed principles or methods, but of a "fair value" method that Mr. Faraj personally developed. The method is not widely accepted in valuing cryptocurrency, has not been peer-tested, and no investment bank today publicly reports the "fair value" of any platform-specific cryptocurrency token. The report does not cite any academic papers or sources for its description of valuation methodologies or in support of chosen methodology.
    - ➢ In sum, Chief Judge Glenn concluded that the report was unreliable, not based on sufficient facts or data, the expert was not properly acquainted with the underlying source material, and that there were no standards controlling the operation of the AI that generated the report, which culminated in an error ridden report. **Thus, the Court held that the report failed to meet standards for admission and excluded the AI created report**.

AI Used in Preparation of Expert Reports (cont.)

- There are not many articles written specifically on the use of AI in preparation of valuations contained in expert reports.
  - ❖ A useful article on the use of AI in evidence is Paul W. Grimm, Maura R. Grossman, Gordon V. Cormack, Artificial Intelligence As Evidence, 19 Nw. J. Tech. & Intell. Prop. 9, 41-79 (2021).

Digital Trust

- Conversation is evolving towards a digital trust conversation.
- How can you incorporate these tools when performing valuations and maintain the trust of the audience (judges, attorneys, etc.).
- All models require some degree of validation and monitoring for model drift and unintended outputs.
  - ❖ Trust
  - ❖ Verify
  - ❖ Be vigilant
  - ❖ Be skeptical
- When it comes to these newer AI tools, the presumption should be that blind trust and reliance is almost never justified.

Final Comments / Observations

AI is great for some things, but human oversight remains critically important.

Questions?

-The End-

Faculty

Hon. Lisa G. Beckerman is a U.S. Bankruptcy Judge for the Southern District of New York in New York, sworn in on Feb. 26, 2021. From May 1999 until she was appointed to the bench, she was a partner in the financial restructuring group at Akin Gump Strauss Hauer & Feld LLP. From September 1989 until May 1999, she was an associate and then a partner in the bankruptcy group at Stroock & Stroock & Lavan LLP. Prior to her appointment, Judge Beckerman served as a co-chair of the Executive Committee of UJA-Federation of New York's Bankruptcy and Reorganization Group, as co-chair and as a member of the Advisory Board of ABI's New York City Bankruptcy Conference, and as a member of ABI's Board of Directors of from 2013-19. She is a Fellow and a member of the board of directors of the American College of Bankruptcy, as well as a member of the National Conference of Bankruptcy Judges (NCBJ) and the 2021 NCBJ Education Committee. She also is a member of the Dean's Advisory Board for Boston University School of Law. Judge Beckerman received her A.B. from University of Chicago in 1984, her M.B.A. from the University of Texas in 1986 and her J.D. from Boston University in 1989.

Jordana L. Renert is a partner in the Bankruptcy and Restructuring Department of Lowenstein Sandler LLP in New York, where she advises clients on all facets of complex chapter 11 reorganizations, workout proceedings and corporate trust matters. She represents clients ranging from indenture trustees and agents to creditors' committees, lenders and debtors. Ms. Renert is often the trusted advisor to a wide array of clients in the enforcement of creditors' rights involving secured, unsecured, public or private debt through her work with indenture trustees, agents, debtor-in-possession lenders and official committees in chapter 11 cases. Her restructuring experience spans numerous industries, including health care and hospitals, energy, retail, hospitality, municipal finance and real estate. Ms. Renert is a frequent writer and speaker about the latest bankruptcy trends, and she was recognized in *New York Metro Super Lawyers* in 2023. She received her B.S. in 2003 in industrial and labor relations from Cornell University and her J.D. *magna cum laude* in 2007 from Brooklyn Law School, where she received the Professor Barry L. Zaretsky Bankruptcy Fellowship.

Boris J. Steffen, CPA, ABV, CGMA, ASA, CDBV is a managing director at Province, LLC in Miramar, Fla. He has more than 30 years of experience as a financial advisor and expert witness to holders of interests and claims on matters of accounting, finance, valuation and solvency. Throughout the span of his career, Mr. Steffen has consulted in mergers, acquisitions and restructurings amounting to upwards of $100 billion across numerous industries, including aerospace, automotive, consumer products, financial services, health care, pharmaceuticals, real estate, retail, technology and telecom. He also has experience in special litigation committee service, and he has acted as an independent accounting expert in post-closing working-capital disputes and the evaluation of asset acquisitions. Mr. Steffen has served as an expert witness with respect to a variety of issues, including the interpretation of accounting principles, allocation of costs, specificity of merger synergies, actual and constructive fraudulent transfers and fair value, including before the Delaware Court of Chancery. During his time at Province, he has served as financial advisor to the unsecured creditors' committees of landmark cases, including Purdue Pharma, Ascena Retail Group and Eagle Hospitality Trust. He also served as financial advisor to the Committee of Opioid Related Creditors in Mallinckrodt PLC and as financial advisor to the Special Committee of the Board of Managers in Intelsat Envision Holdings, LLC. Dur-

ing a recent engagement, he notably prepared an opinion outlining the solvency of an entity engaged in the commodity brokerage industry that was being restructured by means of a divisive merger. Prior to joining Province, Mr. Steffen was a senior managing director with B. Riley Financial and the Southeast leader of the Financial Investigations & Dispute Advisory Services practice of RSM US, LLP. His other roles have included managing director at Gavin/Solmonese, principal and director with Navigant Economics, LLC (formerly Chicago Partners), partner at Bates White, LLC, senior consultant at the Antitrust, Finance and Damages Practice of the Economics and Policy Group of LECG, Inc., manager of Acquisitions in Corporate Development for U.S. Generating, Inc. and group leader/accountant and auditor in Corporate Finance for Inland Steel Industries, Inc. In addition, he served as senior staff member of the Office of Accounting & Financial Analysis of the Federal Trade Commission's Bureau of Competition. Within this role, he served as co-writer of the 1997 Merger Guideline revisions concerning merger-specific efficiencies, failing firm and failing division analyses, and he testified in the first action in which the newly revised merger efficiency defense was litigated. Mr. Steffen received his B.S. in finance and a bachelor of music in trumpet performance from DePaul University, and his Master of Management with specializations in accounting and finance from the Kellogg School of Management of Northwestern University.

Jackson D. Toof is a partner in ArentFox Schiff LLP's Complex Litigation and Bankruptcy and Financial Restructuring Group in the firm's Washington, D.C., office, where he focuses on all aspects of bankruptcy and financial services litigation. He has represented both plaintiffs and defendants in a wide range of commercial matters. Rated AV-Preeminent by Martindale-Hubbell, he has been involved in all aspects of bankruptcy and financial services litigation, including pursuing and defending actions on behalf of various creditor constituencies, complex financial restructurings and valuation disputes, and he has handled all aspects of litigation-enforcing indentures and the rights and remedies of indenture trustees. He also has been involved in ratemaking determinations for digital music licenses before the Copyright Royalty Board, and he has extensive experience defending and pursuing actions in numerous areas, including a variety of business tort, contract and real estate actions, shareholder litigation, noncompete and nonsolicitation litigation, probate litigation, False Claims Act/*qui tam* and health care matters, as well as criminal and white-collar criminal defense. Mr. Toof has first- and second-chaired jury, bench and administrative trials in a variety of civil and criminal matters, and his litigation practice involves all phases of litigation from strategic business counseling and problem-solving through trial and appellate review. He serves on the firm's Professional Conduct Committee and co-chairs the firm's Litigation Support Committee, and was the chair of the firm's Associates Committee from 2009–12. Mr. Toof began his career in 2003 as a litigator while serving on active duty with the U.S. Navy's Judge Advocate General's (JAG) Corps. He continued his service as a Lieutenant Commander in the U.S. Navy reserve until 2012. Mr. Toof has served as an adjunct professor at American University Washington College of Law teaching criminal procedure. He is a member of ABI and the Virginia, Fairfax County, Northern Virginia Bankruptcy, District of Columbia and American Bar Associations. Mr. Toof received his B.A. *summa cum laude* and Phi Beta Kappa in 1999 from the University of New Hampshire and his J.D. in 2002 from American University's Washington College of Law, and he graduated from the Naval Justice School in 2003.