

AI and Valuation: Possibilities and challenges

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The Perspective

There was a time when an annual report demonstrated a company's value to its shareholders via a strong order book, a healthy balance sheet and a history of attractive dividends. But the landscape has changed in recent years, and companies now face the need to express corporate value on a broader level. As the business landscape evolves rapidly, the importance of accurate and efficient business valuations has never been greater. In this context, artificial intelligence (AI) has emerged as a ground-breaking force, enabling unprecedented levels of precision and efficiency in the valuation process.

The data driven business landscape

It's hard to imagine a world without data. It even sounds surrealistic to have such thoughts nowadays. Almost everything we do in our daily life generates huge amounts of information. Never before did companies have access to the vast amounts of data they store today, ranging from data on customers and financials to operations and ecosystems. One of the challenges facing companies attempting to report on long-term value is the huge amount of data available and how to draw meaning from it. To comprehend the scale of this challenge, consider that data in our global digital universe, is doubling in size every two years. In this context, artificial intelligence (AI) could prove to be the game-changer, with the ability to make sense of this data and identify meaningful indicators.



Key Terms

Artificial intelligence (AI): refers to using computers, IT systems, and technologies and their abilities to perform tasks that naturally require human intelligence, i.e., simulated cognitive, critical thinking, and reasoning capabilities

Generative AI: a type of AI system capable of generating text, images, or other media in response to prompts using a database

Machine Learning: the use and development of computer systems that can learn and adapt using algorithms and statistical models to analyse and draw inferences from patterns in data

Deep Learning: a subset of machine learning based on artificial neural networks with multiple layers of processing to imitate the human brain

Predictive AI: the use of data, statistical algorithms and machine learning techniques to identify the likelihood of future outcomes based on historical data

AI and Business Valuation: A Synergistic Partnership

AI has transformed the business valuation landscape by introducing machine learning algorithms and data analytics to the process. These technologies allow for a more objective and accurate assessment of a company's value, as they can process vast amounts of data and make predictions based on historical trends and patterns. The power of AI in the context of business valuations can be significant, and it can provide valuable insights and efficiencies. First, AI can facilitate data processing and analysis processes, including historical financial statements analysis, trend forecasting, and market and industry research. This capability can be useful in assisting valuation professionals in assessing the subject company's current position and future growth prospects.

Second, computer systems, algorithms, and data-driven modelling can enhance the valuation analysis by identifying risk factors and incorporating them into the intricately calibrated valuation modelling.

Given the widespread prominence of AI-based tools and technologies in a wide range of industries, the valuation professional can look for industry guidance and comparable companies to benchmark and gain insights that can be applied to their valuation assignment. Industry and sector analysis can assist the valuation professional in determining the appropriate value drivers for the companies operating in the same or similar industry, help to support growth rate assumptions, and assess the reasonableness of the discount rate.

Advantages of AI in Business Valuation

a. Improved Accuracy: By leveraging AI, valuations are less susceptible to human error and subjective assumptions, resulting in more accurate outcomes.

b. Enhanced Efficiency: AI-powered tools can process data and perform calculations at a speed that far surpasses human capabilities, significantly reducing the time it takes to complete a valuation.

c. Greater Flexibility: AI can easily adapt to changing market conditions and incorporate new data, allowing for more agile and up-to-date valuations.

d. Comprehensive Analysis: AI can analyse a wider range of factors, such as macroeconomic trends, industry-specific data, and social media sentiment, providing a more holistic view of a company's value.

Automated Valuation Models

Traditionally, estimating the value of a property has been done by human appraisers, but over the past several decades, algorithms have taken on a larger role. Invented in the 1920's, AVMs have been increasingly commercialized since the late 1980's. Their sophistication—and thereby their coverage and accuracy—has grown significantly. Simple regressions were supplanted by machine learning methods which then evolved into ensembles of many models. Most recently, computer vision algorithms examine photos of homes to evaluate the condition of a property, such as whether there is any water damage or if a roof needs

replacing. While technological innovations are often presented as “revolutions” and “tsunamis,” this gradual

expansion of AVMs—an example of what we call algorithmic creep—is the more commonplace reality.

In the long term, the adoption of AVMs also portends fewer jobs and lower wages for appraisers.

Automated valuation models (AVMs) are software-based pricing models used in the real estate market to value properties. AVMs are more efficient and consistent than a human appraiser, but they are also

only as accurate as the data behind them, meaning they may be outdated or incorrect. Additionally, AVMs don't factor in the actual value of the property, so any variations in the condition of the property could cause a discrepancy between the estimate and actual property value. Appraisers, investors and lenders can leverage AVMs to get a more accurate value for their property of interest — whether residential or commercial — by compiling much larger amounts of data in much less time than a traditional valuation. Thanks to advancements in AI, instead of being tasked with countless hours of cross-referencing value estimates from a spreadsheet, tools powered by machine learning can immediately and intuitively compare values across an entire state, region, county or city, delivering results faster and more accurately than ever before.

The Future of Business Valuation and AI

As AI continues to advance, it is expected to play an even more prominent role in business valuations. Some potential developments include:

a. Real-time Valuations: With the integration of AI, real-time valuations could become a reality, providing businesses and investors with instant access to updated valuations.

b. Automated Valuation Reports: AI could generate comprehensive valuation reports, combining data from various sources and presenting it in an easily digestible format for stakeholders.

c. Enhanced Due Diligence: AI-powered tools could be employed to conduct in-depth due diligence on companies, revealing hidden risks and opportunities that might have gone unnoticed using traditional methods.

Challenges in using AI for valuation

Artificial Intelligence (AI) has emerged as a transformative force especially in the realm of valuations, has been noteworthy.

While AI promises to refine the valuation process with its analytical prowess, it is paramount to wield this tool judiciously. AI has now found its way into business valuation. While the traditional calculations of valuation remain unchanged, the process of data collection will change enormously. AI will impact how business valuations are performed and the role of accredited professionals.

From our experience and knowledge of artificial intelligence algorithms that currently exist, such tools solely use a market approach for estimating patent

value and are, therefore, significantly limited in their effectiveness. Furthermore, these tools do not appear to explicitly consider the purpose and standard of value related to the appraisal exercise. These limitations can have a significant effect on the final determination of monetary value.

Although AI-powered solutions may enable valuation professionals to make better decisions and improve risk management and assessment techniques, AI should not replace the expertise and sound judgment of valuation professionals. Human interpretation, experience, and qualitative assessments are still crucial in understanding the nuances and context of a business's value. Valuation professionals will need to adapt to and leverage AI technologies as valuable tools to enhance their expertise and provide more accurate and insightful valuations.

Conclusion

Companies are increasingly expected to demonstrate how they are creating long-term value, which means going beyond purely financial metrics and establishing new KPIs. One of the challenges they face in doing so is accessing, and then analysing, credible, comparable data. Artificial intelligence is proving to be a valuable tool here, as it can be used to read and analyze large volumes of data, helping to identify meaningful KPIs for nonfinancial metrics and then measure performance against them.

The integration of AI into business valuations is revolutionising the field, offering a more accurate, efficient, and comprehensive approach to determining a company's worth. As AI technology continues to evolve and improve, it will undoubtedly become an even more integral part of the business valuation process, further solidifying its importance in the industry. This paradigm shift has the potential to significantly impact decision-making processes for businesses, investors, and financial professionals, ultimately leading to better-informed decisions and optimised outcomes.

References

- https://www.ey.com/en_gl/assurance/how-artificial-intelligence-can-help-to-measure-long-term-value
- <https://www.bvresources.com/blogs/business-valuation-law-news/2023/02/17/artificial-intelligence-is-exploding>
- <https://www.rnz.co.nz/national/programmes/ninetoon/audio/2018891485/using-ai-to-value-companies>
- Holder, L., Gruenbichler, R., & Grbenic, S. O. (2022). The use of artificial intelligence in business valuation: Status quo and trends based on a literature review. In T. Jagrič
- Ranjan, R., Sankaranarayanan, S., Bansal, A., Bodla, N., Chen, J. C., Patel, V. M., & Chellappa, R. (2018). Deep learning for understanding faces: Machines may be just as good, or better, than humans. *IEEE Signal Processing Magazine*, 35(1), 66-83. (Ed.),