How much is artificial intelligence worth?

By Angela Sadang, Marks Paneth LLP, USA

E: asadang@markspaneth.com

Recent breakthroughs and disruptive technologies have made the valuation of emerging companies challenging. The one 'looming' question from founders of these companies is: 'What is my company really worth?' Or, from investors: 'What will I pay for a slice of the multi-trillion-dollar tech sector?' A third perspective might reflect a strategic partner evaluating an acquisition or joint venture opportunity.

Take, for example, one of the fastest-growing, yet arguably least understood, areas of the tech sector today: artificial intelligence (AI). Noted physicist Stephen Hawking made headlines when he declared that 'Artificial intelligence research is now progressing rapidly. Recent landmarks such as self-driving cars, or a computer winning at the game of Go, are signs of what is to come. Enormous levels of investment are pouring into this technology. The achievements we have seen so far will surely pale against what the coming decades will bring'.[1]

Explosive growth for AI is on the horizon

In recent years, US tech giants realised the importance of AI for their services and began pouring money into startups. The pickup in mergers and acquisitions began in 2014. Tech giants – including Google, Twitter, Salesforce, Apple, Intel, Yahoo, IBM, and AOL – bought nearly 30 AI startups in the last 5 years.[2] Five of these acquisitions occurred in 2016. One of the most notable deals was the acquisition of deep-learning startup, DNNresearch, by Google in 2013 from the computer science department of the University of Toronto. This acquisition helped Google improve its image search features. Other notable deals include the $600 million acquisition of the UK-based DeepMind Technologies in 2014 by Google; and the $150 million acquisition by Twitter of the 14-person startup UK-based image-processing startup Magic Pony.

Venture capital (VC) interest in AI boomed in recent years as well. The boom began 2 years ago as '2014 marked a banner year for VC investment in US-based AI startups, with capital invested and deal count increasing year-on-year by 183 percent and 41 percent, respectively'.[3]

Forrester Research estimates that 'Cognitive Computing Technologies' business will be worth $1.2 trillion by the year 2020, with investments in AI tripling by then.[4] Accenture defines the AI sector as 'IT systems that sense, comprehend, act and learn' and predicts that by 2035, it will be worth $8.3 trillion in the United States alone.[5] These are order-of-magnitude numbers that should make just about everyone sit up and take note.

The AI valuation challenge

The valuation debate starts with understanding the difference between two opposing valuation methodologies and two opposing interests – the entrepreneur/founder/owner's, versus the investor's – and taking a *strategic* versus *operational* view.

Some tech companies have services, some have new technology, some have great strategic partners, some have an established client base, and some have a vision. It is 'vision' in places like AI that can get a startup company noticed, but it is a murky area for intellectual property (IP) and more general investment valuations. Proprietary technology can come into play here as well – and patents need to be tracked carefully. Founders in the AI space know they need to focus their

pitches on strategic valuation, not on operational valuations based on more standard sales/profit growth formulas or even if the company is simply growing its customer base exponentially or value based on a team of engineers (i.e. team value).

Operational valuation works in favour of investors and acquiring companies. It's one of the oldest discounting tactics around. It seems unfair to assign zero premium to AI technology, or to whip-smart founders/technology team with a vision.

As an example, I recently had a conversation with the founder of a revolutionary AI company who had been involved in AI for the past decade and hit a home run by developing a technology that would become the equivalent of Siri or Alexa for the retail and consumer sector. The founder spoke about his vision to create technology that would mimic human interaction. One of the first uses of his technology is in retail, replicating the experience of having a sophisticated advisor helping to curate the customer experience. The founder provided his vision for the company, his thoughts about the future of AI, the balance between AI innovation and AI safety, as well as a variety of other visionary and business strategy topics.

At the flip side of this was a discussion with one of the prospective investors who was focused on the AI company's revenue growth momentum and accelerating earnings and cash flow. Secondary considerations included the tremendous value of its proprietary AI technology platform, and the team of prized technology engineers behind it.

Today, investors have rushed to the 'disrupters' – which, just like the internet stocks of the late 1990s, are promising out-of-this-world growth. In this context, 'out-of-this-world' is not just a figure of speech: three companies are vowing to go to Mars. Meanwhile, the average forecast earnings growth rate of companies here on Earth is more than 20% (based on the constituents of the MSCI All Country World Index [ACWI; https://www.msci.com/acwi]).

'Operational' valuation methods: Merits and challenges

Acquisitions of AI companies are largely or entirely based on the AI company's teams and capabilities. Their employees are traded much like professional athletes.

According to an analysis done by Magister Advisors, the median price paid to AI startups per employee is $2.4 million. However, the buyers do not use this metric to value the AI startups; they will only use it as a cross-check to avoid overpaying.[6]

The challenge in the valuation of startup technology companies stems from a lack of historical information, versus what's available from a more mature company. The big questions include: 'Do we have a good cash flow forecast?', 'Have we developed a reasonable weighted average cost of capital (WACC)?', 'Are we getting the right market comparable EBITDA multiples?' and the like.

Instead, with startup technology companies or AI companies you're focusing much more on the potential that may exist for this investment 12 months, 18 months, to 5 years down the road and whether their exit strategy might be through an initial public offering (IPO); sale to a strategic partner; or, in some cases, sale to another financial sponsor.

Establishing reasonable parameters around exit scenarios can be extremely challenging, not only with respect to the magnitude (i.e., what value might the company command from an IPO at some point in the future), but also the probability and timing of various exit scenarios, as well as the dilution that may occur between the valuation date and that eventual exit.

Methods of valuing AI companies: Is there a 'right' way?

There are many methods of valuing startup tech companies, including the option pricing method (OPM), probability weighted expected return method (PWERM), venture financing and current value method.

There are varying camps of thought as to what the 'right' valuation method is. The primary inputs that are unique to startup tech companies require establishing supportable and reasonable inputs to the valuation models. Appropriate market data to support some of the inputs, outside of some sectors – such as biotech – can be truly challenging. Valuation will require frequent reliance on either future forecasts or third-party transactions in the securities of the startup company. Which also means you can get to whatever valuation number you want!

In some cases, it is better to go back to a fundamental analysis or stick to a method favoured by auditors, such as OPM. The OPM is a powerful tool, but it may not be the right valuation method – as it depends on normal distribution of returns and, frequently, returns are not normalised and unpredictable at best for disrupter companies. It goes back to the inputs and assumptions used and the flexibility to calibrate the model for changes in the business.

However, audit firms would like to see an approach that is documentable and replicable.

There is an important need to recognise that the valuation process is not a simple formula. Judgement plays a critical role in the discipline.

Understandably, the alluring feature of the OPM from both a valuation and audit perspective is that it's more structured and input-driven.

The third perspective: Calibration and judgment

The different operational valuation methods may not be as straightforward as they might seem, which highlights the importance of calibration to the valuation analysis. Trends in the industry can get easily and quickly subsumed by company-specific events, which differ with more mature non-technology-related companies. There is judgement involved beyond the formulaic models and, while calibration is a critical part of measuring the fair value of venture companies, unknown variables will remain.

Overall, valuing technology companies is a challenging exercise and operational valuation methods introduce structure and agreement to the valuation discipline. However, there is an important need to recognise that the valuation process is not a simple formula. Judgement plays a critical role in the discipline.

The valuation specialist's role truly includes assessing both strategic vision and the effectiveness of operational value; finding the middle ground between the founder and the investor and bridging the gap; and establishing a linkage between operational and strategic valuations.

References

1. University of Cambridge. 'The best or worst thing to happen to humanity' – Stephen Hawking launches Centre for the Future of Intelligence. Available at http://www.cam.ac.uk/research/news/the-best-or-worst-thing-to-happen-to-humanity-stephen-hawking-launches-centre-for-the-future-of
2. CBInsights – Research Briefs. The race for AI: Google, Baidu, Intel, Apple in a rush to grab artificial intelligence startups. Available at https://www.cbinsights.com/research/top-acquirers-ai-startups-ma-timeline/
3. VB. For AI startups, more funding is often not the answer. Available at https://venturebeat.com/2017/07/01/for-ai-startups-more-funding-is-often-not-the-answer/
4. James McCormick. Predictions 2017: Artificial intelligence will drive the insights revolution. Forrester Research. Available at https://go.forrester.com/wp-content/uploads/Forrester_Predictions_2017_-Artificial_Intelligence_Will_Drive_The_Insights_Revolution.pdf
5. Mark Purdy and Paul Daugherty. Why artificial intelligence is the future of growth. Accenture Institute for High Performance. Available at https://www.accenture.com/us-en/_acnmedia/PDF-33/Accenture-Why-AI-is-the-Future-of-Growth.pdf
6. Emel Akan. The artificial intelligence gold rush. Epoch Times. Available at http://www.theepochtimes.com/n3/2140540-the-artificial-intelligence-gold-rush/

If you have any questions or would like to discuss this article further, please contact:

Angela Sadang

E: asadang@markspaneth.com