Valuing the 'new oil': the intersection of international data valuation practice and regulatory regimes

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Peter Maras
Reference Consulting Pte Ltd, Singapore
peter.maras@referconsulting.com

Introduction

How does Tesla generate shareholder value to become a half-a-trillion-dollar company? Through selling cars? Through selling batteries? Through being a market leader?

What if it were also a data[1] company?

'From the very beginning, Tesla has prioritised the collection and utilisation of all possible data analytics from their car owners. In fact, since 2018, Tesla has collected over 3 billion miles of real world driving data, significantly more than the 20 million collected by its closest competitor […] The most high profile use of this data is the potential development and deployment of autonomous vehicles.'[2]

It is becoming increasingly clear, as a commercial intuition, that data may have value. It can produce customer insights, operational insights, predict trends, drive efficiency, catalyse new technologies and disrupt industries. We can store data, protect data, 'mine' data and we can set AI models loose on it. It is also clear that the volume of data is growing as the computation power available to do ever more useful things with that data, such as driving value creation and innovation, is improving. So, data has business utility and, increasingly, commercial parties are willing to pay for it. But how do we quantify this value in *financial terms*?

It is this author's view that an interdisciplinary approach may be needed, with the complexities of privacy and data protection regulations in the spotlight.

Background: the IVSC's recent work

The International Valuation Standards Council (IVSC) – an independent global standard setter for the valuation profession[3] – has recently attempted to broach this emerging issue by the release, in February 2024, of a Perspectives Paper entitled *Valuing Data*.[4]

The paper has the stated intention to initiate and foster debate in the valuation community and to provide context around the complexities of valuing data as an emerging asset class.

When valuing any asset class, the IVS require the valuer to consider and select the most relevant and appropriate valuation approaches for the valuation of the asset based on its intended use(s). There are three principal valuation approaches: cost, income and market. Depending on the data to be valued, the intended use and availability of information, generally at least one of those approaches would be expected to be considered and applied in valuing the data.
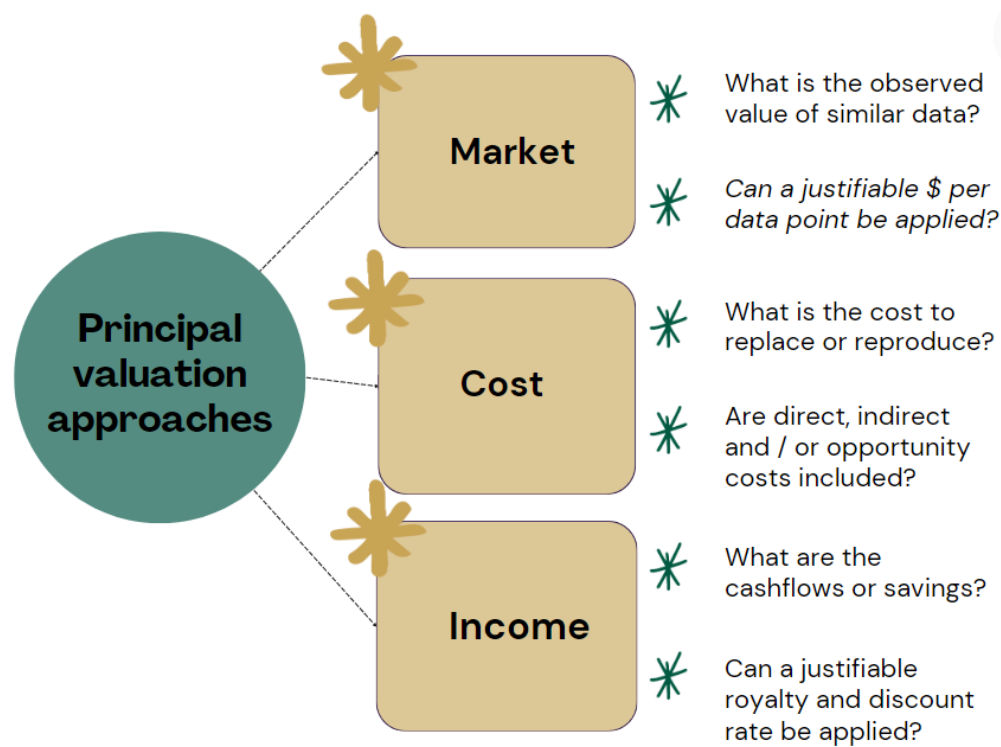
The IVSC does not provide an asset-specific data valuation standard yet and hence, valuation practitioners (either seeking International Valuation Standards (IVS)-compliant valuations or using the IVS as guidance) would rely on the IVS (for example, asset-agnostic issues such as valuation models, valuation bases etc) and on the intangible asset-specific guidance (IVS 210). It is still very much an emerging field.

Valuation bases – market value

The IVS also require that a valuation scope of work includes a specified valuation basis, for example:

'Market value is the estimated amount for which an asset and/or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's-length transaction, after proper marketing and where the parties had each acted knowledgably, prudently and without compulsion.'[5]

Under the market value valuation basis, the IVS clarify that the hypothetical buyer and hypothetical seller have an intended use which is consistent with the highest and best use of that asset (in this case data). No entity-specific factors are to be included in inputs to assess market value[6] – that is, factors that reflect value that the data may have with regards to a specific buyer or seller, and which are not available to market participants more generally. In practical terms, this may involve a consideration of the second highest and best use case of the relevant asset as an input to assess the market value in circumstances where the highest and best use case is derived from entity specific factors.

Key value drivers for data as an asset

Some key value drivers of data that may be considered in a financial valuation are illustrated below. Many of these go to the nature of the data asset itself and the way these attributes interact with the proposed or available use case(s).

A data valuation may require a consideration of many value drivers. In theory, all else being equal, the rarer/more exclusive the data, the more accurate, and complete (fewer missing data points), the timelier (less obsolescence plus immediate use potential) and more consistent (data can be compared), the more accessible (because it is in a useable format), the more valuable the data.

And the more usage restrictions, the more contingent liabilities/risks (eg, for personal or highly confidential market-sensitive data) attached to the data, the less valuable the data.

Illustrative key drivers of data value
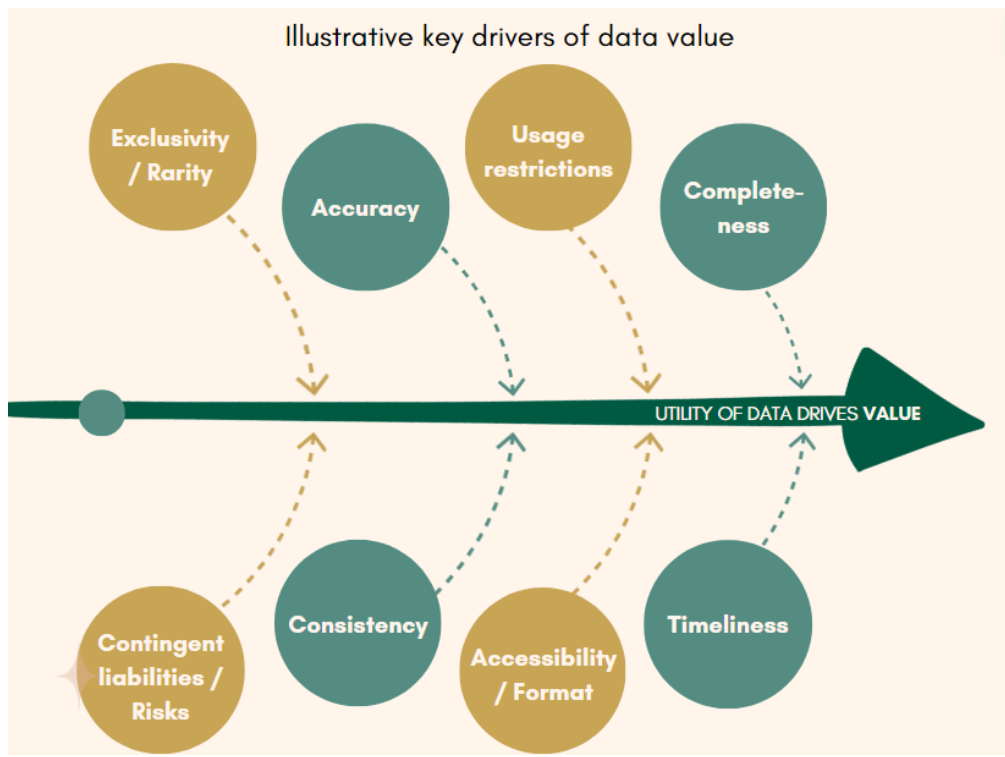
Why is understanding data value such an interdisciplinary exercise?

Many of these value drivers relate to intrinsic attributes of the data itself which may be best understood by the data owner and/or a data scientist. Their domain knowledge would intersect with the valuation as they may be able to provide guidance, for example, on whether it would be feasible to convert data to a more comparable form or useable format. They may also be able to provide practical input as to whether more accurate data can be obtained, or whether this is the best available dataset in the circumstances. They may also be able to assess how the data compares to competing data in the market?

> A data valuation may require an interplay between the data owner, who understands their industry and how the data has been collected; the data scientist, who may understand what can be done with that data using artificial intelligence (AI) and/or machine learning (ML); regulatory counsel, who may understand the constraints and legalities of what that data cannot be used for; and an intangibles valuation professional, who values in accordance with the (second?) highest and best use case within that industry subject to actual constraints.

Data valuation

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proach
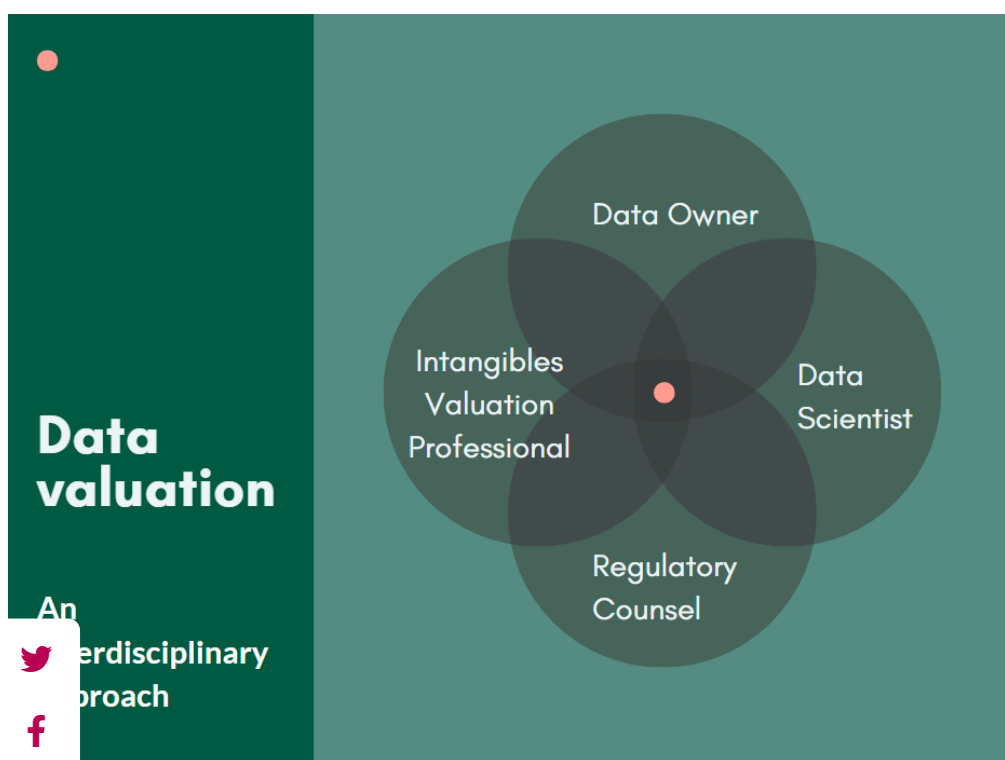
...ch, domain knowledge is key to driving a commercial understanding ...ta as a financial asset class.

Why might legal regulations be relevant to what appears to be a purely financial exercise?

The author suggests this is because the data asset use case (and hence potential value driver) will be shaped by the regulatory parameters to which the data is subject – especially for key value drivers such as exclusivity, usage restrictions and contingent liabilities/risks. That is, what can and cannot be done with such data, the extent to which it can be replicated or monetised into cash flow generation and the risks of using and storing the data may inform the price the market (or rational purchaser, depending on the valuation basis) is willing to pay for it. Such factors may also need to be considered in a specific or multi-jurisdictional context given the intangible nature of data.

Interplay of valuation and regulation for data

The selection of valuation approach and method, and its application under market value and/or other valuation bases may require the following interdisciplinary considerations:

Jurisdiction-specific factors

> Does the value of data vary from jurisdiction to jurisdiction? Is there an interplay of the regulatory regime and the proposed use case of the data which is relevant in valuation terms?

> Does the value of data change through time as regulatory regimes and data use cases (along with other market variables) evolve? Is the value of data today worth what we can do with it, say, in five-to-ten-years' time (when combined with future five-to-ten-years' worth of data based on that future regulatory regime)?

> Are there laws, regulations or other market requirements on data quality which may have a bearing on value? For example, corporate environmental, social and governance (ESG) reporting. Is there a risk that if the data is inaccurate or of low quality there could be liability concerns? Quantification of costs to improve the data to a useable and requisite standard may be a consideration.

> What are the legal data hosting requirements? Some jurisdictions such as Brazil, China, Germany, Indonesia, Russia and Vietnam have data localisation laws where there may be a requirement that, at least certain data is hosted locally, which may result in duplication of storage or other inefficiencies. What other data sovereignty issues might be at play?[7]

> From an operational perspective, does the data need to be hosted close to the AI model to reduce latency? Does this practically mandate that the data be hosted in certain jurisdictions or else risk the inefficiency of building multiple models?

> Do regulations restrict the portability of data across borders? Do these have a quantitative effect where the international transfer of data is relevant to the proposed use case of the data (eg, outsourcing)? Can the data be transferred to a more data-friendly, use case-friendly or tax-friendly jurisdiction?

:lusivity

> Is the data protected by a legal mechanism? Through patents, copyrights and trademarks? Can the data even be 'owned', or is it simply the case that it can only be de-facto 'owned' through the

exclusion of others' use through contractual and data protection mechanisms? Furthermore, does the value come through a de facto exclusive right to use rather than an actual exclusive right to use?

- Who is the originator of the data stored in the data cube, warehouse or lake and what rights do they have? Is it propriety data? Or a compilation from other sources? Does the data have multiple owners? Is there still value in a multiple ownership structure?

- What rights of access to data do we have? We may not 'own' the data but there may be restricted rights to use such data? What about for longer term contracts? For example, analogy to long-term leases on real estate. What data rights do we have, if any, at the expiry or termination of such contracts?

- Is the data replaceable? Can the be data legally be replaced or recreated from public sources? Or perhaps from non-public sources which have significantly more access and cost considerations? If it can be recreated from scratch quickly then perhaps it does not have any significant value above cost saved from not having to do this. Or is there a time premium for any first mover advantage or immediate utility?

- If data that was purchased is used to train a model and that data is no longer required for the model, does the model 'owner' need to continue licensing the data from the original data 'owner' after training? From a data scientist perspective, is the data still required to retrain or update the model? For valuers, does the value now reside in the model? Is there value in the original data?

Usage restrictions

- Does the characterisation of the data under the relevant law affect the value? For example, personal data versus other kinds of data. Do compliance requirements (for example, responding to personal data access requests, which may entail dedicated staff and diversion of operating resources) add to cost?

- Are data privacy rights such as the right to be forgotten (and their theoretical application to remove data before it can be commercially applied) quantitatively relevant? What if a significant percentage of consumers in the future wish to remove their data from databases which were already used to train models? Is this a consideration in economic depreciation of data?

- Do contractual restrictions such as privacy policies and confidentiality agreements also restrict the use case of such data? Do they increase the liability of the firm should they be breached? Does this mean that extremely profitable use cases of data are off limits? Can compensation be provided? Are there wider ethical rather than strictly legal considerations here?

- How might data subject rights such as those related to automated individual decision-making, including profiling, under General Data Protection Regulation (GDPR) affect the demand and scalability for the use case(s)?

Contingent liabilities/risks

> What about co-dependency risk? For example, data inputs are a requirement for an AI model fundamental to business operations. If data is lost, there may be business interruption consequences. Is business interruption claimable under an insurance policy? Is material damage to the data itself claimable? What are the costs of insurance? The excess? The length of the indemnity period? What is the risk of an uninsurable catastrophic event?

> What is the total cost of data ownership? Not just data hosting/data warehousing, but the costs of securing that data (which itself may require AI)? What are the potential contingent liabilities from a potential data breach or misuse (even if such a probability is small, the results of a data breach can have catastrophic consequences in terms of fines, reputational damage, and lost data)?

> Are environmental considerations relevant? Given data centres are also known to account for, globally, on average, one to 1.5 per cent[8] of electricity usage and one per cent of greenhouse gas (GHG) emissions. There may also be GHG emissions arising from electricity consumption to train, deploy and use an AI model based on that data and from securing that data.

Conclusion

In summary, the financial valuation of data is an emerging area but, in the author's view, it will only grow in significance. It is a fertile ground for interdisciplinary collaboration given the interplay between the various domains of knowledge to potentially develop best market practices to value and better understand the utility of data as an asset class.

Notes

[1] There does not appear to be a market standard definition of data. Hence, we refer to the ISO/IEC definition of 'data' by way of example: 'reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing' ('ISO/IEC 20546:2017(en) Information technology – Big data – overview and vocabulary' (International Organisation for Standardisation), **www.iso.org/obp/ui/#iso:std:iso-iec:20546:ed-1:v1:en** accessed 4 June 2024). Does 'data' include such intangible assets as trade secrets and know-how?

[2] Elizabeth Mizaon, 'Tesla: Automaker or Data Company' (AI Data & Analytics Network, 16 November 2020). Reproduced with permission from author. Original at **www.aidataanalytics.network/data-monetization/articles/tesla-automaker-or-data-company** accessed 4 June.

[3] The IVS issued by the IVSC have been integrated, for various asset classes, in domestic legislation and/or regulations to varying degrees in Australia, Indonesia, the Philippines and Singapore, among others. The degree of integration and acceptance of the IVS appears to be growing.

SC Perspectives Paper, 'Valuing Data' (IVSC, February 2024) **w.ivsc.org/pdfviewer/perspectives-paper-value-and-date/?_viewer=true#page=&zoom=page-fit&pagemode=none**> sed 4 June. IVS-compliance may be optional in many contexts, may be pulsory, may be beneficial, or may be simply agreed upon between the r and client.

S 102: Bases of Value Appendix A10.01. And also, the 'International tion Glossary – Business Valuation' (Jointly published by ASA, CBV Institute, RICS and TAQEEM, 24 February 2022) mirrors the wording of the IVS 'market value' definition without providing further interpretation

guidance, **https://cbvinstitute.com/wp-content/uploads/2021/11/International-Valuation-Glossary-Business-Valuation_EN.pdf**.

[6] One theoretical rationale for this principle is that such a specific buyer (or seller) may 'win' in an open and competitive market scenario at a price that is less than the maximum they would otherwise have been theoretically willing to pay to represent the entity specific value of that asset. For example, its willingness to pay may be slightly more than the market which will not be making economic decisions based on these entity specific factors.

[7] See, eg, Erol Yaboke, Caroline G Ramos and Lindsey R Sheppard, 'The Real National Security Concerns over Data Localization' (Centre for Strategic International Studies (CSIS), 23 July 2021), <**www.csis.org/analysis/real-national-security-concerns-over-data-localization**> accessed 4 June 2024.

[8] World Economic Forum, '4 innovative ways to harness waste data centre energy' (*World Economic Forum,* 13 February 2024) <**https://www.weforum.org/agenda/2024/02/harnessing-waste-energy-data-centres/#:~:text=Data%20centres%20account%20for%20up,to%20the%20International%20Energy%20Agency**> accessed 4 June 2024.