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Valuing Data Assets: A Disputes Perspective



Data has emerged as one of the most strategically important assets in the modern economy, yet its valuation remains among the most challenging exercises confronting forensic experts and the legal professionals who retain them. Unlike tangible assets or even conventional intangible assets such as patents and trademarks, data possesses a constellation of distinctive economic characteristics — non-rivalry, context-dependency, uncertain depreciation, and regulatory encumbrance — that make the direct application of traditional valuation frameworks problematic.

This article identifies and examines the key attributes and characteristics of data that bear upon its estimated value and provides a practical framework for lawyers navigating disputes in which the worth of a data asset is at issue. The analysis draws upon established valuation principles, emerging academic research, and our experience in forensic engagements.



01



The Challenge of Valuing Data in a Dispute Context

The question of what a data asset is worth can arise in a wide variety of disputes, including post-acquisition price adjustments, shareholder disagreements, intellectual property infringement claims, breach-of-contract actions involving data licensing arrangements, and expropriation proceedings under investment treaties. In each of these settings, a tribunal or court will need to form a view on value, and the credibility of that view will depend on the rigour and transparency of the methodology underpinning it.

The starting point for any valuation exercise is to understand what is meant by "value." As the International Valuation Standards Council has observed, value is not a fact but an opinion — either of the most probable price to be paid for an asset in an exchange, or of the economic benefits of owning that asset. [1]In data disputes, the relevant standard of value (whether fair market value, fair value, value to the owner, or some other basis) will be dictated by the governing law, the applicable treaty, or the agreement between the parties, and this choice of standard will often have a material effect on the resulting figure.

Valuing data is distinctly more complex than valuing a conventional business or a discrete piece of intellectual property for at least two overarching reasons. First, the value of data is highly context-specific and closely tied to the process by which it was generated, the purpose for which it is used, and the capabilities of the organisation that deploys it. Second, the future value of data is inherently uncertain: unlike machinery or patents, which typically depreciate in a broadly predictable manner, data may increase or decrease in value as use cases evolve over time. [2]These features mean that a forensic valuation expert may need to look beyond traditional models and engage closely with the specific characteristics of the data asset in question.

1.Valuation in Disputes: Navigating Uncertainty | FTI

2.THE VALUE OF DATA ASSETS A report for the Department for Digital,

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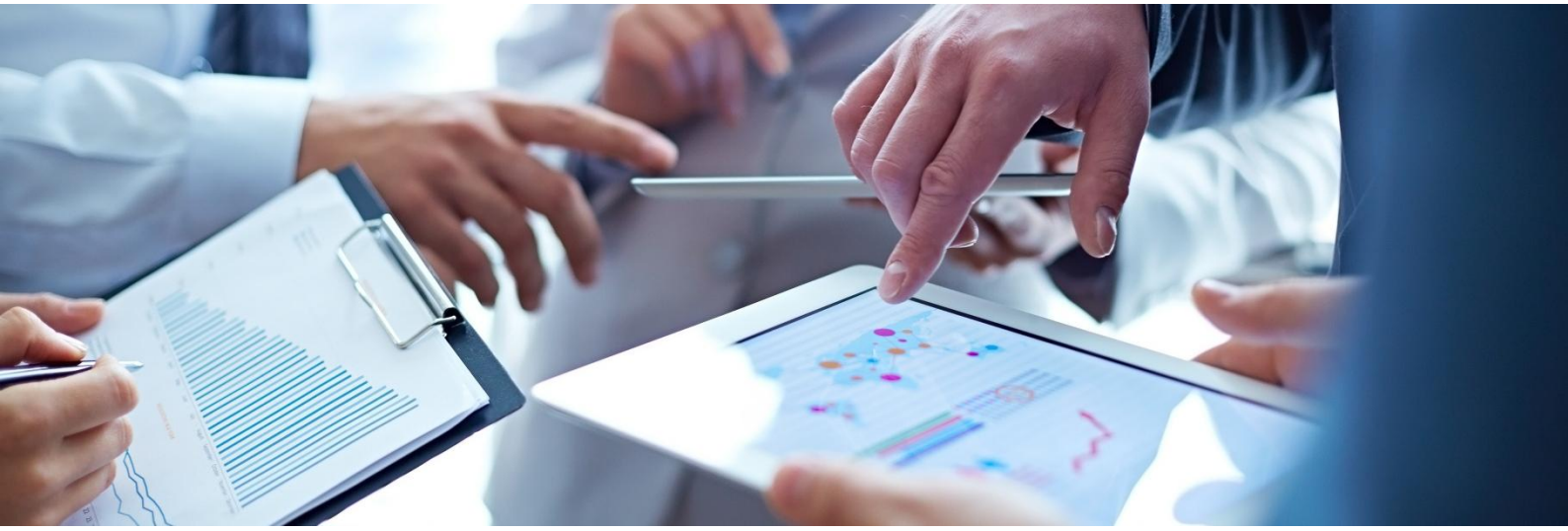
Established Valuation Approaches and Their Application to Data

Before examining the attributes of data that influence value, it is helpful to survey the main valuation approaches and how they translate to the data context. In this regard three primary approaches are commonly recognized: the income approach, the market approach, and the cost approach. [3]

The Income Approach

Under the income approach, the value of an asset is derived from the present value of the future economic benefits it is expected to generate, discounted at a rate reflecting the time value of money and the risk attached to those benefits. When applied to data this approach requires the valuer to identify how the data generates cash flows, whether through direct monetisation (selling or licensing the data itself), through the sale of data-driven products, through the enhancement of existing products, or through improvements in internal productive efficiency. The challenge, of course, is that these cash flows may be deeply intertwined with other assets of the business, making it more difficult to isolate the incremental contribution of the data. A discounted cash flow analysis that cannot reliably separate the data's contribution from the contributions of the technology platform, the algorithms, the brand, and the human capital that together extract value from the data will be vulnerable to challenge on cross-examination.

3.The Guide to Damages in International Arbitration - Sixth Edition



The Market Approach

The market approach values an asset by reference to the prices at which comparable assets have transacted. In the data context, this approach faces a fundamental obstacle: data is rarely bought and sold in arm's-length transactions, and the terms of data-licensing deals are frequently confidential. Where transaction evidence does exist, the comparability of different datasets can be difficult to assess because value is so heavily context-dependent. For example, the Nectar loyalty card acquisition by Sainsbury's for approximately £60 million might provide an illustrative, but imperfect, example of a market-based data point as the transaction price likely reflected assumed synergies and integration with broader technology assets beyond the data itself. [4]

The Cost Approach

The cost approach values data by reference to the costs incurred to collect, store, process, and maintain it, or alternatively by the cost of replacing or reproducing the data. This approach is relatively straightforward to implement but has a significant limitation: it typically does not capture the economic benefit that the data generates - only the investment required to create it. Because organizations will typically invest in data only if the expected return exceeds the cost, the cost approach is often recognized as providing a floor or lower-bound estimate. In a dispute a respondent may favour this approach precisely because it tends to produce a conservative figure while a claimant may argue that it materially understates the asset's true worth.

The choice among these approaches — or the decision to use more than one as a cross-check — will depend on the nature of the data, the availability of information, and the specific facts of the dispute. In our experience, a well-constructed valuation will consider multiple approaches where feasible and explain the reasoning for the weight assigned to each.

Key Attributes and Characteristics of Data That Impact Value

At the heart of any data valuation exercise lies the assessment of its specific attributes. Through our work we have identified a set of key characteristics that, individually and in combination, can bear materially on the estimated value of a data asset. We have grouped these characteristics into three broad categories: intrinsic data quality attributes, contextual and economic attributes, and legal and regulatory attributes. The following sections examine each in turn.

4.THE VALUE OF DATA ASSETS A report for the Department for Digital,

Intrinsic Data Quality Attributes

The quality of the information contained within a data asset is foundational to its value. Data quality consists of several interrelated dimensions, including those listed below.



Accuracy refers to the degree to which data values correctly represent the real-world entities or events they describe. Inaccurate data can lead to flawed predictions, misguided business decisions, and, in a dispute context, a material reduction in the damages that a claimant can credibly claim. A valuation expert may want to assess the mechanisms by which accuracy was maintained, whether through validation protocols, independent verification, or cross-referencing against trusted external sources.



Completeness addresses whether all necessary data points are present. Gaps in a dataset, such as missing fields, absent records, or unrepresented segments of a population, can diminish the dataset's analytical utility and, by extension, its value. A dataset that covers only 70 per cent of the target population, for instance, may be adequate for rough trend analysis but wholly insufficient for the granular predictive modelling that would command a premium in the market. The extent to which missing data can be imputed or supplemented is itself a relevant consideration.



Consistency denotes the uniformity of data across different records, systems, and time periods. Inconsistent data, such as the same customer appearing under different naming conventions or the same metric being calculated differently across divisions, undermines the reliability of any analysis built upon it and can erode value. In a post-acquisition dispute undisclosed inconsistencies discovered during integration may form the basis of a claim that the data asset was not worth what the purchaser was led to believe.



Validity concerns whether data values conform to the expected formats, ranges, and business rules applicable in the relevant domain. Invalid data, such as dates in impossible formats, negative ages, or currency figures without decimal precision, may cause downstream processes to fail and can diminish the confidence that a hypothetical purchaser would place in the dataset.

These quality dimensions are not independent of one another. A dataset may be highly accurate but incomplete, or complete but riddled with inconsistencies. The interplay among these dimensions means that quality is best assessed as a bundle rather than in isolation, and the forensic valuation expert should resist the temptation to reduce quality to a single score without explaining the context.

Contextual and Economic Attributes

Beyond intrinsic quality there are broader characteristics which determine how much economic value a data asset can generate. These are contextual in the sense that they depend on the environment in which the data is deployed and the capabilities of the entity that uses it.



Uniqueness and exclusivity can be among the most powerful drivers of data value. Data that cannot be readily replicated or obtained from alternative sources often confers a competitive advantage on its holder and is therefore likely to command a higher price. Conversely, data that is freely available from multiple sources, for example widely published macroeconomic statistics, will have limited incremental value to any single user. In a dispute the degree to which the data in question is exclusive to the claimant, versus available to competitors or the public at large, is an important factor to consider. The concept of exclusivity in data valuation parallels the exclusion right that underpins the value of intellectual property. As the World Intellectual Property Organization has observed, the value of an intangible asset essentially comes from the right to exclude competitors from using it. [5]



Timeliness and currency refer to whether data is sufficiently up to date for its intended use. In many domains, such as financial markets, logistics, digital advertising, the value of data decays rapidly with the passage of time. A dataset of consumer purchase intentions that is six months old may be worth a fraction of what it was at the point of collection. The forensic valuation expert should attempt to assess the rate at which the data in question depreciates and determine whether, at the valuation date, the data retained meaningful economic utility.



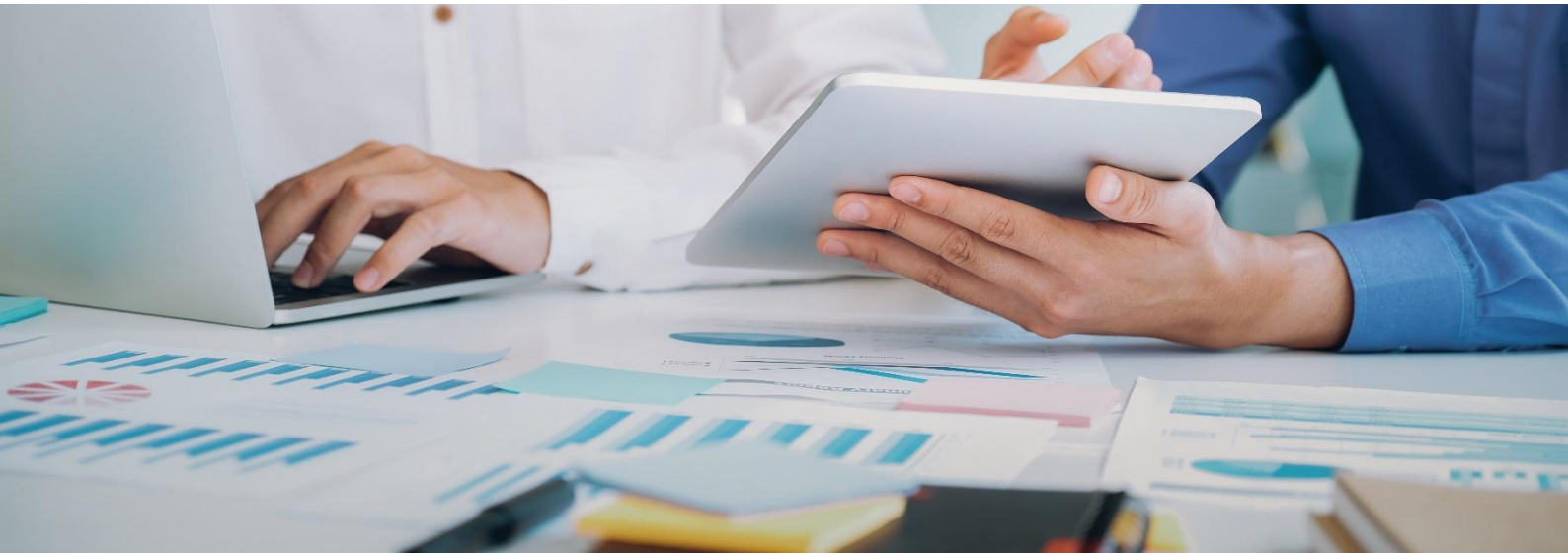
Volume and scope describe the breadth and depth of the data. All else being equal, larger datasets will tend to be more valuable because they permit more robust statistical analysis, support more sophisticated machine-learning applications, and cover a wider range of use cases. However, the relationship between volume and value is typically non-linear. Research across multiple domains has demonstrated that firms face diminishing marginal returns to data volume beyond a certain threshold. [6]Netflix, for example, found rapidly diminishing returns to data in driving improvements in its recommendation algorithm once a modest threshold of user data had been reached. The implication for valuations prepared in a disputes context is that a claimant asserting that "more data equals more value" must be prepared to demonstrate the specific use cases in which additional volume translates into incremental economic benefit.



Linkability and interoperability capture the extent to which a data asset can be combined with other datasets to generate additional insights. Data that can be readily linked, for example through unique identifiers such as a customer ID or a geospatial reference, is generally more valuable because it enables the creation of richer, more comprehensive analytical views. This characteristic is particularly important in disputes involving data-sharing arrangements or data trusts where the value of the combined dataset may substantially exceed the sum of the values of its constituent parts.

5.Valuing Intellectual Property Assets

6.The Value of Data and Its Impact on Competition Marco Iansiti



Use case and purpose dependency is perhaps the single most important contextual attribute. The same data may have no value in one context while being extremely valuable in another. A dataset of shipping accident reports, for instance, may be of limited value to a consumer goods company but of enormous value to a maritime insurer or a port authority. For the valuation expert this means that the value of data cannot be assessed in the abstract and must be tethered to the specific use cases that the data supports or could support. In this respect a rigorous valuation should map the data asset to the revenue streams or cost savings that it enables and will distinguish between existing use cases (which generate known or estimable cash flows) and potential future use cases (which introduce greater uncertainty).

Non-rivalry and replicability are defining economic features of data. Unlike physical assets, data is non-rival. That is, it can be used by multiple parties simultaneously without being consumed or diminished. This characteristic has profound implications for valuation. On the one hand, non-rivalry means that data can be licensed to many users concurrently creating the possibility of multiplicative revenue streams. On the other hand it raises difficult questions about the extent to which the value of data to one user is affected by the number of other users with access to the same data. A dataset's value may be highest when access is restricted and lowest when it is widely disseminated because its exclusivity generates a competitive advantage. In a dispute involving the misappropriation of data the tribunal will need to grapple with the question of whether the claimant's loss is best measured by the value of the data in the claimant's hands (which has been reduced by the respondent now also having it) or by the value that the respondent has gained.

Organisational capabilities and complementary assets recognise that the value of data is not determined solely by the data itself but also by the capabilities of the entity that deploys it. Two organisations with identical datasets may derive dramatically different value from them, depending on their analytical talent, technology infrastructure, business processes, and organisational culture. In a fair market value exercise the relevant question is what value hypothetical willing buyers with reasonable capabilities (i.e. a notional market) would ascribe to the data. In a value-to-the-owner exercise the answer may be quite different if the owner possesses unique complementary assets.

Legal and Regulatory Attributes

The legal and regulatory environment surrounding a data asset has a direct impact on its value by determining who can access, use, transfer, and monetise the data and at what cost.



Regulatory compliance costs, particularly those arising from data protection regimes such as the European Union's General Data Protection Regulation (GDPR), can materially affect the economic utility and therefore the value of data. Research has shown that the GDPR led to a measurable increase in the effective cost of data for EU firms. One study estimated a 22 per cent increase in the variable cost of data inputs, prompting firms to reduce data storage and processing. [7]For forensic valuation expert the compliance burden associated with a particular data asset (including the costs of consent management, data subject access requests, breach notification, and cross-border transfer mechanisms) should be factored into the projected cash flows or otherwise reflected as a discount to its top-line value.



Sensitivity and confidentiality refer to the degree to which the data contains personal, commercially sensitive, or otherwise regulated information. Data assets that include personal data attract heightened regulatory requirements and associated costs, which can diminish their net value relative to anonymised or non-personal data. At the same time certain forms of sensitive data, such as granular health data or financial transaction data, may be extremely valuable precisely because they are scarce and difficult to obtain lawfully. This creates a tension between regulatory costs and market premiums.



Intellectual property protections can enhance the value of data by providing legal mechanisms to exclude competitors from its use. Depending on the jurisdiction, data may attract copyright protection (as an original compilation), trade secret protection (if maintained in confidence), or contractual protections through licensing arrangements. The strength and durability of these protections will influence the degree to which the data owner can capture the economic rents associated with the data. A dataset protected by robust trade secret protocols and restrictive licensing terms is, all else being equal, more valuable than an equivalent dataset with no enforceable legal protections.



Transferability and portability determine the ease with which the data can be sold, licensed, or otherwise transferred to third parties. Data that is subject to contractual restrictions on transfer, regulatory data localisation requirements, or technical incompatibilities that impede portability will be less liquid and therefore less valuable than freely transferable data. In M&A disputes limitations on the transferability of data assets, whether arising from privacy law, contractual covenants, or technical constraints, can be a significant source of disagreement between parties.

7.NBER Working Paper Series: Data, Privacy Laws and Firm Production:

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Summary of Key Attributes Impacting Data Value

The following table consolidates the key attributes discussed above and summarises their directional impact on value, the valuation methodology they most commonly affect, and illustrative considerations for dispute practitioners.

Table 1: Key Attributes and Characteristics of Data Impacting Estimated Value

Attribute	Description	Impact on Value	Primary Valuation Methodology Affected	Illustrative Dispute Considerations
Accuracy	Degree to which data correctly represents real-world entities or events	Higher accuracy increases value; inaccuracy reduces reliability and economic utility	Income approach (cash flow reliability); cost approach (remediation cost)	Was the accuracy of the data warranted at the point of sale? What is the cost of correction?
Completeness	Extent to which all required data points are present	More complete data supports broader analysis and commands a premium	Income approach (scope of use cases)	Were gaps in the data disclosed? Do missing records affect the claimed damages?
Consistency	Uniformity across records, systems, and time periods	Inconsistent data raises integration costs and diminishes analytical reliability	Cost approach (integration cost); income approach (reduced returns)	Did inconsistencies emerge post-acquisition, supporting a purchase price claim?
Uniqueness / Exclusivity	Degree to which the data is unavailable from alternative sources	Exclusive data confers competitive advantage and commands higher value	Market approach (scarcity premium); income approach (monopoly rents)	Can the respondent obtain equivalent data elsewhere? Is the data truly proprietary?
Timeliness / Currency	Whether data is sufficiently up to date for intended use	Value typically decays over time; stale data may be worthless for time-sensitive applications	Income approach (discounted future utility)	At the valuation date, was the data still current enough to support the claimed use cases?
Volume and Scope	Breadth and depth of the dataset	Larger datasets may be more valuable, but diminishing marginal returns are common	Income approach (scale of applications); market approach (comparable sizing)	Is more data actually more valuable in this specific context, or has the threshold of utility been reached?

Attribute	Description	Impact on Value	Primary Valuation Methodology Affected	Illustrative Dispute Considerations
Linkability / Interoperability	Ability to combine the data with other datasets	Linkable data enables richer analysis and new use cases, increasing value	Income approach (incremental revenue from combined data)	Does the data use standardised identifiers? What is the incremental value of linkage?
Use Case Dependency	Value varies materially depending on the purpose for which data is used	Same data may be worthless in one context and highly valuable in another	All approaches (must be tethered to specific use cases)	Which use cases are proven and which are speculative? How should speculative value be weighted?
Non-Rivalry	Data can be used simultaneously by multiple parties without diminishment	Enables multiple revenue streams but dilutes exclusivity advantage	Income approach (multi-licensee revenue); market approach (licensing benchmarks)	Has dissemination of the data to the respondent reduced the claimant's competitive advantage?
Regulatory Burden	Compliance costs arising from data protection and other legal frameworks	Higher compliance costs reduce net value; strict regulation may increase scarcity value	Income approach (higher operating costs reduce cash flows)	What is the cost of GDPR or equivalent compliance? Does the regulation restrict monetisation?
IP / Legal Protections	Copyright, trade secret, or contractual protections over the data	Stronger protections enhance excludability and therefore value	Income approach (ability to capture rents); market approach (comparable licensing terms)	What legal protections exist? Are they enforceable in the relevant jurisdiction?
Organisational Capabilities	Skills, technology, and culture of the entity deploying the data	Value to the owner may far exceed fair market value if unique capabilities are present	Income approach (value to owner vs. market value)	Is the valuation standard fair market value or value to the owner? How do capabilities differ?

Note: This table is intended as a practitioner's guide not an exhaustive taxonomy.
Directional impacts are general and may vary depending on the specific facts of the dispute. The "primary valuation methodology affected" column identifies the approach most directly influenced but multiple approaches may be affected indirectly.

04



Practical Considerations for Dispute Practitioners

With the key attributes identified several practical considerations warrant emphasis for lawyers and experts engaged in data valuation disputes.

Defining the Valuation Question with Precision

As in any contentious valuation engagement the first step is to define the valuation question with precision. This requires clarity on the standard of value (fair market value, fair value, value to the owner, or another basis), the valuation date, and the identity of the hypothetical parties to the transaction. In a data context, the choice between fair market value and value to the owner can produce dramatically different results. A proprietary dataset that generates significant value for its owner through integration with the owner's unique technology platform may have a much lower fair market value if no other buyer possesses equivalent capabilities. Counsel should engage the valuation expert early to ensure that the legal standard is properly translated into the assumptions underlying the valuation.

Engaging with the Data Itself

A credible data valuation is difficult to perform at arm's length from the data itself. The expert should understand what the data contains, how it was collected, how it is stored and maintained, what quality assurance processes are in place, and how it is used within the business. This may require access to sample data, data dictionaries, technical documentation, and interviews with the individuals who manage and analyse the data. Lawyers should ensure that appropriate disclosure mechanisms and confidentiality protections are in place to facilitate this access without compromising the data's trade secret status.



Addressing Uncertainty and the Role of Cross-Checks

Given the inherent uncertainty in data valuation the use of multiple valuation approaches and cross-checks is particularly important. Where a discounted cash flow analysis yields a headline figure the expert should test that figure against available market evidence, cost benchmarks, and where possible historical transaction prices. Under the right conditions evidence of prior transactions in the subject data can be especially powerful in anchoring a valuation as it reflects the price that actual willing parties agreed upon. Where such evidence exists but relates to a date materially different from the valuation date the expert should consider how conditions have changed in the intervening period and how those changes may have affected value.

Anticipating Challenges from Opposing Counsel

In a contested proceeding the opposing side will often seek to undermine the data valuation on both methodological and factual grounds. Common lines of attack include challenging the selection of comparable transactions, questioning the reliability of projected cash flows, disputing the discount rate, and arguing that the expert has failed to account for specific characteristics of the data that increase or diminish its value. Research has highlighted the substantial "expert degrees of freedom" that exist within conventional valuation methodologies, whereby minor variations in assumptions can produce widely divergent results. [8]The most effective defence against such challenges is transparency. The expert should set out every material assumption explicitly, explain the basis for each choice, and consider sensitivity analysis showing how the valuation changes under alternative assumptions.

8.Valuation Follies Andrew C. Baker∗ Jonah Gelbach† Eric Talley‡

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Emerging Trends and Forward-Looking Considerations

Several developments are likely to shape disputes involving data valuation in the years ahead. The proliferation of artificial intelligence systems, which are voracious consumers of training data, is increasing the strategic and economic value of large, high-quality datasets - particularly those that are unique or proprietary. [9]Disputes over the value of training data used in AI models are already emerging and are likely to intensify.

The growing body of data protection regulation worldwide is simultaneously increasing compliance costs and, paradoxically, enhancing the scarcity value of lawfully collected, well-curated personal data. The GDPR and its analogues in other jurisdictions have created a regulatory moat that advantages incumbents with established consent frameworks and disadvantages newcomers, a dynamic that has direct implications for the competitive value of data.

Finally, as data markets mature and more transaction evidence becomes available, the market approach to data valuation may become more reliable. Initiatives to develop data exchanges and data trusts could increase the transparency and frequency of arm's-length data transactions, providing valuers with a richer set of benchmarks. For the time being, however, the relative paucity of market evidence means that the income approach, supplemented by cost-based cross-checks and whatever transaction evidence can be identified, is likely to remain the primary valuation methodology in most disputes.

9.Valuing Data as an Asset* Laura Veldkamp Columbia Business School,

Conclusion



Valuing data in a dispute context demands a structured, evidence-based approach that recognises the distinctive economic characteristics of data as an asset class. Unlike physical property or even conventional intellectual property, data is non-rival, context-dependent, and subject to uncertain patterns of depreciation and appreciation. Its value is shaped by a complex interplay of intrinsic quality attributes (accuracy, completeness, consistency, and validity), contextual and economic attributes (uniqueness, timeliness, volume, linkability, use case dependency, non-rivalry, and the capabilities of the deploying organisation), and legal and regulatory attributes (compliance costs, sensitivity, intellectual property protections, and transferability).

No single attribute determines value in isolation; rather, these characteristics operate as a bundle, and the valuation expert must assess how they interact in the specific context of the dispute. The choice of valuation methodology — income, market, or cost — must be tailored to the nature of the data and the available evidence, and the use of multiple approaches as cross-checks is recommended wherever feasible.

For the lawyers who commission and challenge expert valuations of data the most important practical steps are to ensure that the valuation question is defined with precision at the outset and that the expert has meaningful access to the data itself. A valuation that is anchored in a thorough understanding of the data's attributes, tethered to specific and identifiable use cases, and transparent in its assumptions will be far more persuasive to a tribunal or court than one that relies on abstract assertions about the "strategic importance" of data without a rigorous connection to economic reality. In an era in which data is increasingly at the centre of commercial disputes, the ability to determine its value with credibility and defensibility is an essential competency for forensic experts and the legal teams they support.



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