

## THE CASE FOR SPECIALISED APPROACH TO BUSINESS VALUATION

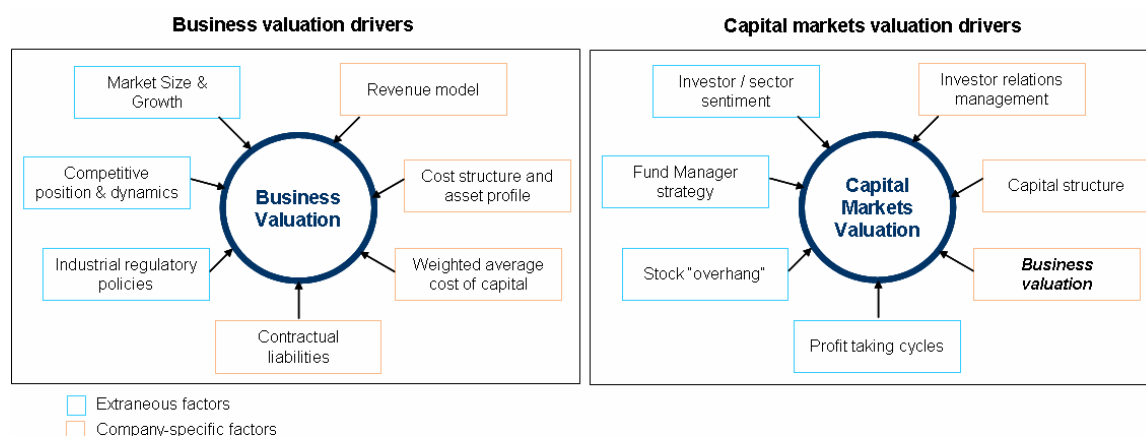
### 1. Introduction

Business valuation measures the economic benefits that arise from a defined asset<sup>1</sup> (physical or intangible), project or entity during a specified period of time. It reflects the “fair market value” that informed and willing buyers are expected to pay for the business asset / project / entity in an arms length transaction.

Business valuation provides fundamental input to several critical business decisions, including:

1. Establish a price for a M&A or capital-raising transaction, particularly in the context of private entities<sup>2</sup>
2. Assess shareholder value impact of alternative strategies in developing business or financial plans
3. Assess shareholder value impact of capital investments in project planning / budgeting decisions
4. Establish “fair market value” of specific assets (e.g. ESOPs, warrants, etc.) for management and financial reporting in line with regulatory (IFRS) guidelines.

Capital markets valuation remains a common (surrogate) basis for valuation of listed business entities. However, the two measures have different drivers and purpose and often yield different values for the same business. Business valuation, in fact, is one of the several “influencers” of capital markets value of a company.



Source: Index Partners

Several analytical approaches exist for business valuation. Most of these approaches are based on financial metrics while a few are derived from sophisticated modelling of a diverse set of input parameters. However, all these approaches require in-depth industry expertise to yield reliable and insightful results.

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**Capital markets valuation is a misleading indicator of business value**

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<sup>1</sup> Liabilities usually include financial instruments with valuations defined by a market or contract.

<sup>2</sup> In the case of listed entities, valuation is primarily guided by capital markets

## 2. Business Valuation Approach: Traditional Tools & Methodologies

Business valuation is as much an art as it is a science, requiring a combination of analytical dexterity and sound business judgement. The field has evolved significantly in recent times to become more:

- *Inclusive* with the incorporation of an increasing *number* and *variety* of input parameters<sup>3</sup> over and above the traditionally used financial (mostly quantitative) data. These changes are reinforced by increased disclosure due to investor and regulatory pressures (e.g. IRS Revenue Ruling 59-60; details in Annexure-1)
- *Specialised* with the adoption of a growing array of analytical tools designed to address specific or complex attributes of a business (e.g. simulation to address uncertainties in business, etc.).

The most common approaches of business valuation and their relative assessment (strengths and weaknesses) are discussed below.

**Traditional Business Valuation Approaches**

| Method                                | Definition   | Strength  | Weakness  |
|---------------------------------------|--|---|---|
| <b>Book value</b>                     | Equals owners equity (=assets less liabilities) for a business or the relevant component of net fixed assets (for a specific asset)          | • Simple to compute (based on audited figures)                                | • Accounting statements may not reflect fair market value of assets and liabilities<br>• Ignores profile of future returns      |
| <b>Adjusted (tangible) book value</b> | Book value less value of intangible assets such as goodwill, patents, etc.   | • Simple to compute<br>• Reflects tangible value only                         | • Accounting statements may not reflect fair market value of assets and liabilities<br>• Ignores profile of future returns      |
| <b>Adjusted (economic) book value</b> | Same as book value with value of key assets (e.g. goodwill, real estate, inventories, etc.) adjusted to reflect their market value           | • Simple to compute<br>• Reflects market value                                | • Accounting statements may not reflect fair market value of liabilities<br>• Ignores profile of future returns                 |
| <b>Liquidation value</b>              | Same as book value with value of key assets adjusted to reflect realisable value on (distress) sale (usually lower than market / book value) | • Simple to compute<br>• Conservative estimate                                | • Accounting statements may not reflect fair market value of liabilities<br>• Ignores profile of future returns                 |
| <b>Replacement value</b>              | Same as book value with value of key assets adjusted to reflect their replacement value (usually higher than market / book value)            | • Simple to compute   | • Accounting statements may not reflect fair market value of liabilities<br>• Ignores profile of future returns                 |
| <b>Income capitalisation</b>          | Earnings (normalised/ average) divided by appropriate capitalisation rate (i.e. risk-adjusted expected rate of return)                       | • Simple to compute and interpret   | • Average 3/5 year earnings may not reflect long-term profile of a business<br>• Subjectivity in estimating capitalisation rate |
| <b>Dividend capitalisation</b>        | Specified multiple of a firm's dividends   | • Reflects cash returns to investors  | • Challenges in estimating sustainable dividends (based on cash-flow, earnings, liabilities, history, etc.)                     |
| <b>Discounted Earnings</b>            | Present value of projected future earnings discounted by risk-adjusted capitalisation rate   | • Forward looking<br>• Captures volatility across time                        | • Sensitive to quality of future earning estimates<br>• Subjectivity in assessing discount rate                                 |
| <b>Price earnings ("PE") multiple</b> | Specific multiple of a firm's profits (PAT/ EBIT/ EBITDA), usually measured per share  | • Simple to compute and interpret   | • Fails to capture earnings volatility or capital structure issues<br>• Subjectivity in multiple estimate                       |
| <b>Sales multiple</b>                 | Specific multiple of a firm's net profits (usually measured per share)   | • Simple to compute and interpret   | • Fails to capture profitability or capital structure issues<br>• Subjectivity in multiple estimate                             |
| <b>Discounted cash-flow ("DCF")</b>   | Present value of projected future cash-flows discounted by weighted average cost of capital  | • Forward looking<br>• Capture profit and cash generation profile across time | • Sensitive to quality of future earning estimates<br>• Complex modelling requirements  |

Source: Index Partners

These measures emphasise simplicity over completeness and therefore need to be viewed in conjunction with a broader portfolio of measures to obtain a comprehensive assessment of a business. The only exception is the DCF approach which is relatively comprehensive and lacks the historical (or static) bias<sup>4</sup> inherent in the other valuation approaches. The following section presents select comprehensive (or "stand-alone") valuation tools (including DCF) that are being increasingly used for insightful business valuation.

## Traditional financial metrics offer incomplete insights on business value

<sup>3</sup> This is particularly true for new sectors (e.g. Internet) and niche areas (e.g. brand valuation)

<sup>4</sup> Refers to their reliance on past (or current period) indicators; the bias is partly off-set (or minimised) by using average estimates for multiple periods (including near-term forward projections).

## 3. Business Valuation Approach: Specialised Tools & Methodologies

DCF is the most basic (and commonly-used) comprehensive business valuation tool. It is based on forward-looking, multi-period cash-flow projections and explicitly incorporates capital structure and working capital impact on business valuation. Meaningful application of DCF approach requires deep industry expertise to develop robust assumptions that underlie future cash-flow projections. This is often under-emphasised relative to the financial mechanic of the approach, leading to its inappropriate use. The relevance of industry knowledge and insights to DCF valuation is highlighted in the diagram below.

### Competence Requirement for DCF-Based Business Valuation

$$DCF^* = \sum_{t=1}^T \{(Revenue_t - Cost_t - Capex_t) \div (1+WACC)^t\}$$

| DCF Component                                    | Key Drivers  | Competence Required for Reliable Assessment   |
|--|--|---|
| <b>Revenue</b>                                   | <ul style="list-style-type: none"> <li>Market Size &amp; Growth</li> <li>Price points &amp; trends</li> <li>Market share</li> </ul>  | <ul style="list-style-type: none"> <li>End-user choices &amp; economics</li> <li>Market segmentation</li> <li>Competitive strategy</li> <li>Industry structure and dynamics</li> </ul>                                      |
| <b>Cost</b>                                      | <ul style="list-style-type: none"> <li>Production model (outsourced vs in-house, etc.)</li> <li>Scale of operations</li> <li>Operating efficiencies (e.g. raw material, labour inputs required, etc.)</li> </ul> | <ul style="list-style-type: none"> <li>Process mapping</li> <li>Economic analyses (e.g. Activity-based costing, etc.)</li> <li>Supply chain management</li> <li>Outsourcing strategy</li> <li>Management quality</li> </ul> |
| <b>Capital Expenditure ("Capex")</b>             | <ul style="list-style-type: none"> <li>Asset concentration &amp; structure</li> <li>Asset quality and life</li> <li>Capacity issues (service-level &amp; utilisation profile)</li> </ul>                         | <ul style="list-style-type: none"> <li>Industry structure and standards</li> <li>Competitive strategy</li> <li>Economic efficiency analysis</li> </ul>  |
| <b>Weighted Average Cost of Capital ("WACC")</b> | <ul style="list-style-type: none"> <li>Capital structure</li> <li>Interest rate</li> <li>Sector parameters (β, etc.)</li> </ul>  | <ul style="list-style-type: none"> <li>Corporate finance</li> <li>Capital markets</li> </ul>  |

In-depth industry knowledge & strategy expertise

Note: \*Calculated over T time periods; subscripts for Revenue, Cost and Capex indicate relevant time period

Source: Index Partners

DCF valuation results are sensitive to WACC assumptions – a parameter that defies precise estimation. This is particularly true for companies with special attributes (e.g. rapidly growing companies with evolving capital structures) or exotic financing instruments (e.g. warrants and convertibles). Accordingly, it is important to examine the sensitivity of business value to a relevant range of WACC assumptions.

## Industry expertise is key to derive reliable and meaningful estimates of business value

Business valuation based on DCF approach – though relatively insightful – suffers from two critical constraints:

- 1) Reliance on “*deterministic*” input assumptions rather than “*stochastic*” assumptions that capture a wider range of potential future scenarios<sup>5</sup>
- 2) Assumed lack of “*flexibility*” in management decision-making that conflicts with real-world practice of continuous “adaptation” (or corrective changes) in response to evolving scenarios

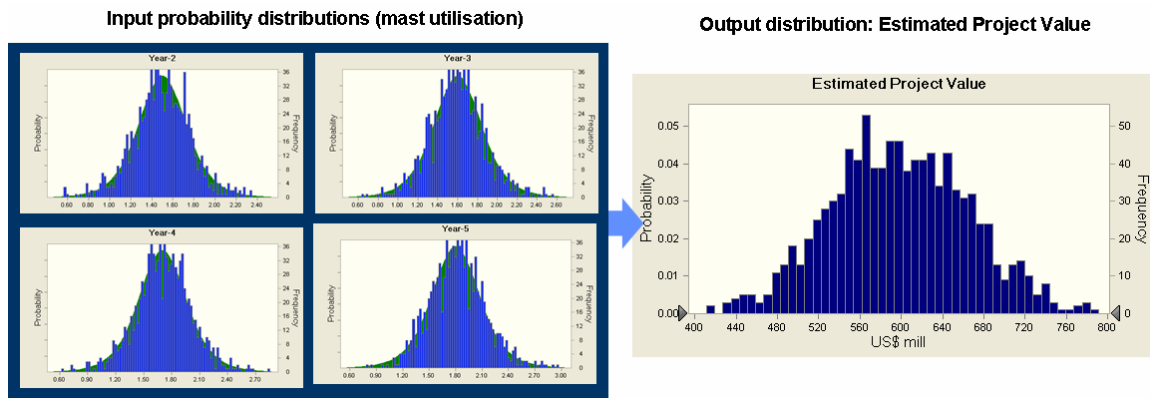
Consequently most business valuation exercises require the use of specialised analytical tools to address the above deficiencies. Two such tools (one addressing each area of deficiency) are discussed below<sup>6</sup>.

<sup>5</sup> Scenario analyses based on changing key assumption values partly overcomes this deficiency

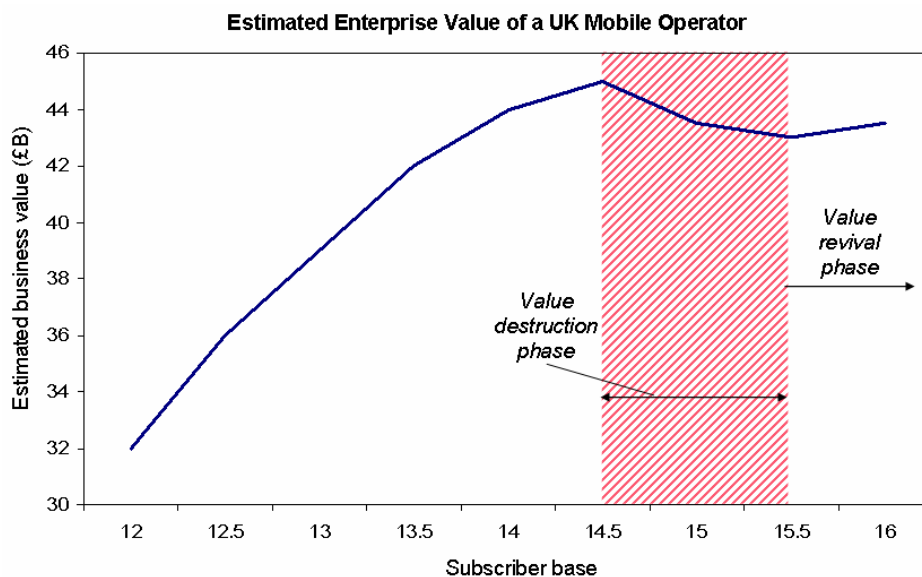
<sup>6</sup> Refer to special publications from Index Partners on Simulation and Real options valuation for more details

### 3.1 Simulation: Modelling Uncertainties in Business Valuation

Simulation is the use of a mathematical model that replicates the causal relationship between two entities to assess the possible range of outcomes by iteration of specified input assumptions. It captures uncertainties in business valuation by modelling specific inputs as stochastic variables with defined distribution parameters. This is illustrated in the example below; it shows the value profile of a mobile telecom towers business<sup>7</sup> with uncertain demand profile (reflected in variable “mast utilisation”).



Simulation is particularly effective in situations where multiple inputs factors have “conflicting” impact on business value, potentially with a time lag. An example is the value impact of marginal subscriber acquisition by an existing mobile telecom player in the UK, as presented in the diagram below. This is based on “System Dynamics” model (a variant of Simulation). The “dip” (value destruction phase) reflects the *positive* impact of enhanced margin contribution more than offset by the combined *negative* impact of increasing acquisition cost for marginal subscribers, escalated price pressure<sup>8</sup> and incremental (step) investments in network capacity upgrades to sustain service levels (accentuated peak traffic profile). The net impact gradually reverses into positive as more “marginal” subscribers join the network (the value revival phase). Such valuation tools offer valuable insights to drive profitable customer segmentation and retention strategies.



Source: Index Partners

Simulation-based approaches usually generate valuation range estimates (rather than point estimates). This adds a useful risk/ uncertainty perspective to valuation exercises (and relevant management decision-making).

<sup>7</sup> Illustrative example with disguised data

<sup>8</sup> This includes a complex dynamic whereby the highest cost operator is likely to become bankrupt and subsequently remerge as a low-cost operator with restructured debt position

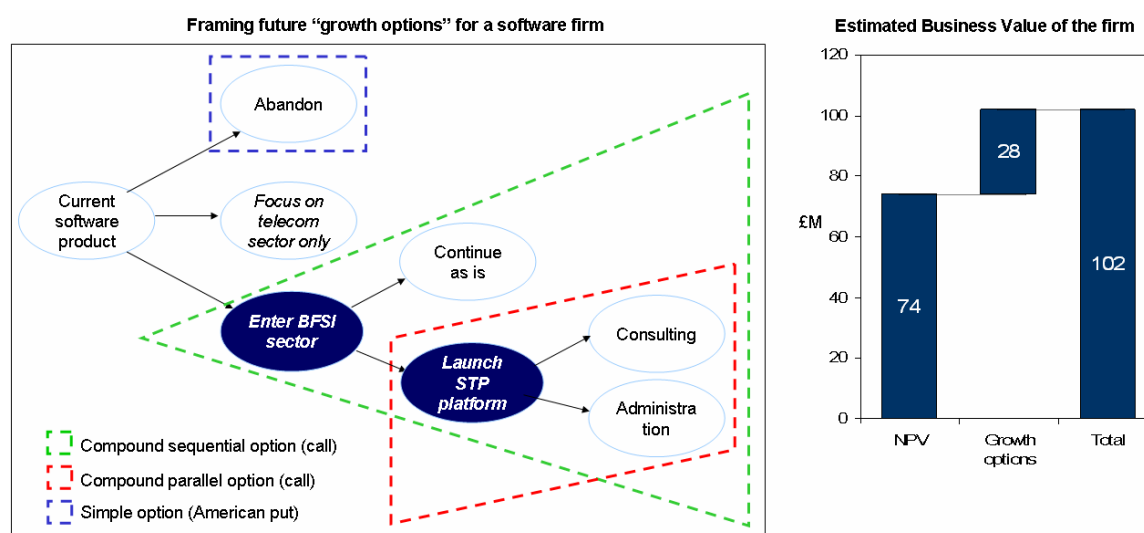
### 3.2 Real Options: Modelling Management Flexibility in Business Valuation

Real options refer to the ability (right without the obligation) of management to revise (e.g., defer, expand, contract, or abandon) a defined investment commitment at a future point in time. It explicitly models the “incremental” and “adaptive” decision-making process (in response to available new information and insights) in the real world. The real-options valuation approach is derived from the financial options theory.

Real options are used particularly for valuation of business situations involving high levels of *investments* and demand/ price *uncertainty*, such as:

- Investment strategies in a natural gas field<sup>9</sup>
- Valuing options for cancellation / change of features in customer contracts in aerospace and defence sector<sup>9</sup>
- Estimating an optimal bid price for a potential future coal field<sup>10</sup>
- Assessing JV / merger opportunities for entering new market segments<sup>11</sup>

Accordingly, real-options approach is used primarily for valuation of major investment projects within large companies or early-stage growth companies. The example below highlights the estimated value of a rapidly growing telecom-sector focused software firm, based on real-options and DCF approaches. The significant difference arises from the firms’ potential opportunity to roll out its core products in Banking, Financial Services & Insurance (“BFSI”) sector at a later point in time once the product reliability is established and the BFSI-sector appetite for the product becomes clear – a “value” that is captured by the real options model but not by the DCF model.



Source: Index Partners

One of the most critical steps in effectively using real-options valuation approach is the framing of “real-options” that are often embedded (rather than explicitly highlighted) in a business situation.

## Specialised valuation approaches should complement DCF analysis for insightful business valuation

Most of the advanced valuation approaches (such as Simulation and Real-options) require application of in-depth industry knowledge as well as proficiency in the use of valuation tools to generate meaningful insights that drive strategy and transaction decisions.

<sup>9</sup> Copeland TE and PT Keenan (1998): “How much if flexibility worth?”, The McKinsey Quarterly No. 2, 1998

<sup>10</sup> Copeland TE and PT Keenan (1998): “Making real options real”, The McKinsey Quarterly No. 3, 1998.

<sup>11</sup> Arnold T and RN Shockley (2002): “Value Creation at Anheuser-Busch: A Real Options Example”

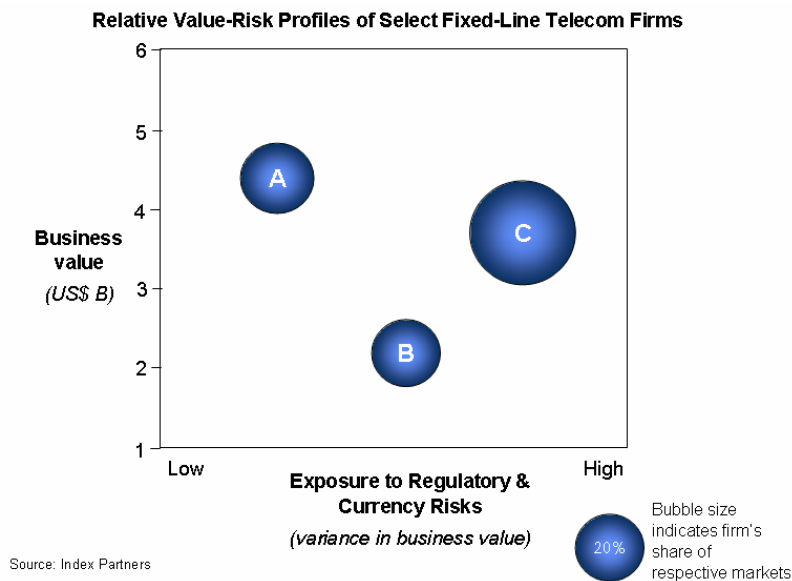
## 4. Integrating risk assessment into business valuation methodology

Business valuation estimates involve risks arising from uncertainties in input assumptions and imperfections in the valuation tools. The risks<sup>12</sup> arising from uncertainties in input assumptions include:

- Market risks such as (s)lower volume uptake, lower price points (or higher price erosion, etc.)
- Regulatory risks that impact price level (e.g. EU directive to reduce telecom interconnect costs), competition (e.g. Ofcom-mandated local-loop unbundling offering new entrants access to BT's network infrastructure) or demand levels (e.g. VoIP being deemed illegal in few emerging markets)
- Currency / foreign exchange risks, particularly for international businesses (e.g. falling value of US\$-£)
- Cost structure risks (e.g. rising oil prices reduce margins of airline businesses)
- Quality of management planning and execution

The risks associated with valuation tools imperfections, however, defies reliable estimation.

It is useful to explicitly articulate the risk associated with specific business valuations. The improved transparency helps companies and investors make more informed decisions. An integrated framework for presenting business value and associated risks is shown below. It shows the relative value-risk profile of select fixed-line telecom firms in Europe. Firm "A" – operating in a relative open and competitive market – has a higher value than firm "C" that dominates (>50% market share) a cluster of relatively "protected" emerging markets. The long-term value of firm "C" remains exposed to regulatory risks (e.g. enforcement of LLU, etc.) that could significantly increase competition and erode its share and profitability position. Furthermore, firm "C" remains exposed to currency risks with revenue streams from multiple emerging markets.



Business valuation traditionally under-emphasised associated risks, reflecting a trend in corporate disclosure that are notoriously inadequate in risk-related information. However, the new IFRS and GAAP guidelines are expected to enhance transparency through improved reporting of business risks (e.g. reporting of pension deficits, etc.), and thereby redefine the fundamental framework of business valuation.

<sup>12</sup> All but the last factor are extraneous variables that are deemed "uncontrollable" by the firm or its management.

## 5. Conclusions

Business valuation is rapidly emerging as a specialised area in professional services, driven primarily by changes in disclosure norms, proliferation of valuation tools and growth in range and diversity of value-sensitive information. Furthermore, industry expertise, analytical proficiency and business judgment are becoming key differentiating factors in business valuation, making it “more of an art than a science”.

The choice of a specific valuation approach is usually guided by trade-off between simplicity and precision. Over-engineered (black-box) models seldom offer meaningful insights given the challenges associated with precise measurement of some input parameters. The use of multiple valuation approaches and subsequent “triangulation” is emerging as a preferred methodology for robust assessment of businesses.

Notwithstanding these trends, the basic principles of independence (*free from conflict-of-interest*) and objectivity (*fact-driven*) remain central to business valuations. These – coupled with a measured “curiosity” to stress-test key assumptions and uncover (and examine) “embedded” risks – defines the overall success of a business valuation exercise.

The above discussions drive four key **conclusions**:

1. Capital market valuations are often misleading indicators of business value
2. Traditional financial metrics offer incomplete insights on business value
3. Industry expertise is key to derive reliable and meaningful estimates of business value
4. DCF approach is inadequate and requires additional analysis based on specialised valuation tools to gain early insights on business value

Index Partners specialises in **valuation** of businesses by *combining its industry expertise* (in Telecom, Media and Technology sectors) and its *proficiency in cutting-edge valuation tools* to support companies and investors in strategy development, M&A and private capital transactions.

### Annexure-1: IFRS Business Valuation Guideline

IRS Revenue Ruling 59-60 states that valuations of businesses should cover the following key areas:

- The nature and history of the business
- The general economic outlook and the conditions of the specific industry
- The book value of the stock
- The financial condition of the company
- The earnings capacity of the company
- The dividend paying capacity of the company
- Whether the company has goodwill or other intangible value
- Previous sales of stock
- The market price of publicly traded companies who are engaged in the same or similar lines of business

Notes:

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