Valuation of Stressed Assets

The Institute of Cost Accountants of India
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Section 1

Background
# Key characteristics of distressed businesses

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<td>Increasing competition</td>
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</table>
Valuation of distressed businesses

**Significant Uncertainty**

**Non-Availability / Reliability of Data**

**No/Limited Comparables**

**Compressed Timing Issues**

**Observations**

- Wide Variations in Value estimates
- Difficult to obtain Financing
- Higher Risk
Section 2

Standard of Value
Standards of Value

Businesses with no imminent fear of liquidation

Orderly Transaction in no Distress Situation

Orderly Transaction in Distress Situation (business sale)

Orderly liquidation (piecemeal basis)

Distressed Companies or Businesses facing liquidation

Forced liquidation (piecemeal basis)

Synergistic Value

Typically, acquisition value by a strategic buyer

Typically, acquisition value by a financial buyer

Sale as a going concern rather than individual assets

Sale as individual assets where sufficient time available for transaction

Sale as individual assets where sufficient time not available for transaction
**Liquidation Value (1/2)**

**Liquidation Value as per IBC**

» As per section 35 (1) of the Insolvency and Bankruptcy Code, 2016 ("IBC"), “Liquidation Value is the estimated realizable value of the assets of the corporate debtor if the corporate debtor were to be liquidated on the insolvency commencement date”.

» Further, section 35 (2) of IBC requires the valuer to determine liquidation value using **internationally accepted valuation standards**.

**Liquidation Value as per other standards**

» According to the International Valuation Standards ("IVS") 104, “Liquidation Value is the amount that would be realized when an asset or group of assets are sold on a **piecemeal basis**, that is without consideration of benefits (or detriments) associated with a going-concern business”.

» According to the Indian Banks’ Association (IBA), "Liquidation Value describes the situation where a group of assets employed together in a business are offered for sale **separately**, usually following a closure of the business".
Orderly Liquidation

» An orderly liquidation-based value is the one that could be realized in a liquidation sale, given a reasonable period of time to find a purchaser (or purchasers), with the seller being compelled to sell on an “as-is, where-is basis”;

» The reasonable period of time to find a purchaser (or purchasers) depends upon asset type and market conditions.

Forced Sale

» Forced sale describes a premise where a seller is under compulsion to sell and that, as consequence, a proper marketing period is not possible.

» The price that could be obtained in these circumstances will depend upon a number of factors such as available time for disposal, market depth, etc. It may also reflect the consequences for the seller on failing to sell within the period available.
Fair Value (1/2)

Fair Value as per IBC

- As per section 35 (1) of the Insolvency and Bankruptcy Code, 2016 (“IBC”), “Fair value” is the estimated realizable value if the assets were to be exchanged between a willing buyer and seller on an arm’s length basis, as on the insolvency commencement date.

Fair Value as per other standards

- According to the International Valuation Standards (“IVS”) 104, “Fair Value is the estimated amount for which an asset 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 knowledgeably, prudently and without compulsion”.

- According to International Financial Reporting Standards (IFRS) 13, "Fair Value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date".
Fair Value

It is the estimated amount, expressed in terms of money, that may reasonably be expected for a property in an exchange between a willing buyer and a willing seller, with equity to both, neither under any compulsion to buy or sell, and both fully aware of all relevant facts, as of a specific date, and **assuming that the earnings support the value reported.**

As per International Valuation Standards, to estimate the fair value of fixed assets, it is mandatory to check the existence of **economic obsolescence (EO)**, and suitably adjust the estimated Depreciated Replacement Cost (“DRC”) of the fixed assets with applicable EO (if any) to arrive at the fair value. To estimate economic obsolescence, enterprise value of Company on the standalone basis is estimated using Income Approach through discounted cash flow method only if projected financial information (PFI) is made available for the analysis.
Example: Power Plants

1. There are two plants (Plant 1 & Plant 2) engaged in the generation & distribution of electricity. Plant 1 has a coal linkage agreement for supply of coal at lower than market prices and also transmits electricity directly into the national grid and has a PPA for 100% generation, whereas Plant 2 has neither of the above.

2. The two plants can be erected at the same cost (500 Mn) & have the same DRC (400 Mn). However, the EV of two plants will differ significantly due to the following reasons:
   - Coal linkage agreement will provide access to cheaper coal to Plant 1. This will lead to cheaper costs of production for Plant 1 as compared to Plant 2, resulting in higher net cash flows and EV.
   - PPA with direct linkage to national grid provides the Plant 1 with an option to generate electricity continuously as the demand is not a constraint. This provides higher revenues & benefits of economies to scale to Plant 1. Higher revenue & lower costs will lead to higher EV for Plant 1.

3. Plant 1’s EV (600 Mn) turns out to be higher than its DRC (400 Mn), and hence, there will be no economic obsolescence. In case of Plant 2, the EV (300 Mn) is lower than DRC (400 Mn) resulting in an economic obsolescence (400 Mn – 300 Mn = 100 Mn) and lower fixed asset value.

Hence, Fair Value could be lower than the estimated DRC in situations of economic obsolescence.
# Understanding Financial Position and Performance: Comprehensive Financial Model

## Stabilisation
- **Short term cash flow forecast (STCFF)**
  - Basis of prep and assumptions
  - Accuracy of forecasting
  - Vulnerabilities/ opportunities

## Overview of historical performance and the competitive environment
- **Commercial environment**
  - Relevant commercial analysis
    - Market positioning
    - Benchmarking using targeted market research:
      - Market research
      - Potential purchaser analysis
      - Company/ Industry KPIs

## High level historical review
- **P&L Past three years**
- **Funds flow Past three years**
- **Financial analysis of:**
  - Revenue stream and drivers
  - Cost base and drivers
  - Capital and operational funding

## Assessment of business viability
- **Operations**
  - Mgmt. structure and operating procedures
    - Operational viability
    - Cost base
      - Mgmt. capabilities
      - Budgeting procedures
      - Key alliances

## Forecast review and sensitivity analysis
- **P&L Agreed forecast period**
- **Funds flow Agreed forecast period**
- **Balance sheet Agreed forecast period**
  - Revenue stream and drivers
  - Cost base and drivers
  - Capex and operational funding

## Conclusions / Recommendations
- **Summary of findings and next steps**
  - Consider whether further work required e.g. Options Analysis
  - Agree forecast information

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Comprehensive Financial Model
Estimation of Enterprise Value

Enterprise Value Range is generally computed using a combination of Income, Market Approach, and Hybrid Approach depending upon availability of reasonable information. A scenario analysis is typically carried out to test the sensitivity of the key business drivers and to estimate the risk assumed in the underlying value.
**Enterprise Value Analysis**

**Enterprise Value ("EV")** can be defined as the value of the entire business representing the total value attributable to both debt holders and equity shareholders.

### Key Inputs:
- Historical Financial Statements
- Techno Economic Viability Study
- Comprehensive Financial Model

### Analysis:
- Income approach (DCF)
- Market approach
- Hybrid approach (LBO)

### Scenario Analysis

#### Upside Scenario:
- Recovery in Prices
- Completion of on-going capex
- Decrease in cost of capital, etc.

#### Downside Scenario:
- Drop in Prices
- Low volume growth
- Increase in cost of capital, etc.

#### Optimistic Case EV

#### Base Case EV

#### Pessimistic Case EV

**Steps in Enterprise Value analysis**
Valuation of Tangible assets
Cost New Estimation
Cost Approach – Buildings, Plant & Machinery (1/3)

Estimation of Cost New

Reproduction Cost New
It is the cost to reproduce the asset in like kind to obtain an asset that is nearly an exact duplicate of the subject asset.

Replacement Cost New
It is the theoretical cost of current labor and materials necessary to construct or acquire a new asset of similar utility to the subject asset.
Estimation of Fair Value

- The cost new of an asset is estimated by reproduction and/or replacement cost method. This cost new is further adjusted for physical deterioration and functional obsolescence, in addition to Economic Obsolescence (EO), as applicable. The value concluded after such adjustments, can be referred to as fair value \( \text{i.e. Fair Value} = \text{DRC} - \text{EO} \).

- Economic Obsolescence is derived using the Income Approach and/or the Market Approach and compared with the DRC of the business / plants on a going concern basis and concluding on the lower of the two values. **In other words, if the DRC of a certain plant is higher than its EV, its fair value cannot be more than the value of the future cash flows it can generate.**
Tangible Assets - Liquidation Value Estimation

Cost Approach – Buildings, Plant & Machinery (3/3)

- Estimation of Cost New
- Physical & Functional Obsolescence
- Depreciated Replacement Cost
- Cost of Disposal
- Liquidation Value

Cost of Disposal:
- Soft Cost
- Installation & Uninstallation Expense
- Curable Obsolescence
- Present Value Adjustment
- Administrative Expense

Depreciated Replacement Cost:
- Present Value Adjustment

Case Study - Liquidation valuation of a Steel Plant
Investment Cost Break-up (1/8)

Types of Tangible Assets
1) Machinery & Equipment
2) Building
3) Land
4) Other Assets

* Other assets includes - Computer & IT Equipment, Furniture & Fixture, Office Equipment, Vehicles
Cost Benchmarking (2/8)

Benchmark Cost Range for Flat Product

INR 6,500 Crs. per MTPA

Estimated Cost New

~ INR 6,300 Crs. per MTPA

Units beyond benchmark cost

Major Units

- Raw Material Handling
- Beneficiation plant
- Pellet plant
- Sinter plant
- Blast Furnace
- Direct Reduced Iron (DRI)
- Steel Melt Shop
- Casters
- Mill - Hot/Cold Strip Mill
- Utilities & Other Assets
- Captive Power Plant
- Pipe Mill
- Cold Rolling Mill Complex
Investment vs Cost New - Machinery & Equipment (3/8)

**Reasons for difference in value:**

- Delay in plant commissioning
- Capitalization of forex exchange fluctuation
- Other unknown factors
Sample Check by Market Approach (4/8)

Sample Working – Hot Strip Mill

- Reproduction Cost: INR 6,500 Crores
- Replacement Cost: INR 4,600 Crores

Concluded Cost
New INR 4,600 Crores.

DRC – 1,800 Crores
Cost of Disposal – 30% to 40%

1) Physical Obsolescence
2) Functional Obsolescence
3) Cost of disposal (soft, installation, cost to remove, cost to cure, admin expenses and liquidation discounts)

Concluded Liquidation Value
INR 700 Crores

Value In Exchange/Liquidation Value
INR 700 Crores.

Market Indicative
INR 650 Crores.
(Budgetary - Subject to negotiation)
Other Sample Checks by Market Approach (5/8)

### Beneficiation Plant
- **Cost New:** 1,700 INR crores
- **LV / Liquidation Value:** 330 INR crores
- **MV / Market Indicative:** 310 INR crores

### Galvanizing Line
- **Cost New:** 400 INR crores
- **LV / Liquidation Value:** 70 INR crores
- **MV / Market Indicative:** 65 INR crores

### Blast Furnace
- **Cost New:** 1,100 INR crores
- **LV / Liquidation Value:** 200 INR crores
- **MV / Market Indicative:** 180 INR crores

### Cold Rolling Mill
- **Cost New:** 600 INR crores
- **LV / Liquidation Value:** 105 INR crores
- **MV / Market Indicative:** 100 INR crores
Other Sample Checks by Market Approach (6/8)

Value Flow

- Cost New: 30% - 40%
- Depreciation: 10% - 15%
- Soft Cost: 5% - 10%
- Installation Expenses: 0% - 5%
- Dismantling Expenses: 0% - 10%
- Dismantling Losses: 0% - 2%
- Administration Expenses: 0% - 5%
Value Comparison – Machinery & Equipment (7/8)

**Key Points:**
- Depreciated Replacement Cost is ~35% less than the Book value of asset in case of Machinery.
- Liquidation value is ~75% less than the Book value of asset in case of Machinery.
Fixed Asset Summary (8/8)

Comparison of Book Value and Liquidation Value

- **Land**: Book Value ~1,000, Liquidation Value 320, % ~70%
- **Buildings**: Book Value 2,000, Liquidation Value 300, % ~85%
- **Machinery & Equipment**: Book Value 44,000, Liquidation Value 10,000, % ~75%
- **Others**: Book Value 6, Liquidation Value 2, % ~65%
- **Inventory**: Book Value 3,200, Liquidation Value 3,000, % ~5%

INR crores

- Book Value
- Liquidation Value

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Valuation of Other Assets
Trade Receivables
Other Assets (1/3)

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<th>Provisioning criteria</th>
<th>Category</th>
<th>Adjustment factor</th>
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<tr>
<td>Expected Credit Loss analysis</td>
<td>0 &lt; Due &lt; 365</td>
<td>Category-wise provision matrix in line with the ECL analysis of comparable companies.</td>
</tr>
<tr>
<td>All dues over 365 days</td>
<td>Due &gt; 365</td>
<td>(i) 100.0 percent provision due to uncertainty associated with recovery from these customers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ii) Percentage provision in line with the ECL analysis of comparable companies.</td>
</tr>
<tr>
<td>Cases of Bad debt</td>
<td>Overall</td>
<td>100.0 percent provision considered for bad debts outstanding under both liquidation and going concern scenario.</td>
</tr>
<tr>
<td>Ongoing Legal Cases &amp; NCLT cases</td>
<td>Overall</td>
<td>100.0 percent provision considered due to uncertainty associated with recovery from these customers.</td>
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<tr>
<td>Debtors with less than INR 0.1 Mn balance</td>
<td>Various Categories</td>
<td>(i) Recoverability from the debtors amounting to less than INR 1 lac considered to be Nil giving cognizance to the time and efforts required for such recovery in case of liquidation scenario.</td>
</tr>
<tr>
<td></td>
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<td>(ii) Recoverability from the debtors amounting to less than INR 1 lac considered as realizable in case of going concern scenario.</td>
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**Illustrative ECL analysis**

<table>
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<tr>
<th>Age brackets (in days)</th>
<th>0-30</th>
<th>31-60</th>
<th>61-90</th>
<th>91-120</th>
<th>121-150</th>
<th>151-365</th>
<th>&gt;365</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Party</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1%</td>
<td>3%</td>
<td>4%</td>
<td>20%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Related Party</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2%</td>
<td>6%</td>
<td>7%</td>
<td>40%</td>
<td>100.0%</td>
</tr>
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*Note: For the purposes of illustration, we have used the provision matrix of a listed comparable company.*
## Inventories
### Other Assets (2/3)

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<th>Typical Approach</th>
<th>Remarks</th>
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<tr>
<td>Raw Material &amp; Raw Material-In-Transit</td>
<td><strong>Net Realizable Value (NRV)</strong></td>
<td>• For Raw Material, the value of raw material items are based on net realizable value/ current rates prevailing in the market, adjusted for any raw material stored in non-saleable condition.</td>
</tr>
<tr>
<td>Work in Progress (WIP)</td>
<td><strong>Net Realizable Value</strong></td>
<td>• For Work in progress, the value of WIP inventory is based on the net realizable value/ current rates prevailing in the market of the respective item, which is adjusted with cost-to-complete and the profit margins.</td>
</tr>
<tr>
<td>Finished Goods</td>
<td><strong>Net Realizable Value</strong></td>
<td>• For Finished Goods, the value of finished goods is based on the net realizable value/ current rates prevailing in the market, which is adjusted with the profit margins.</td>
</tr>
<tr>
<td>Stores &amp; Spares</td>
<td><strong>Net Realizable Value</strong></td>
<td>• For Stores &amp; Spares items, the value of stores and spares is based on recoverable value of the stores and spares keeping in view the nature of each item and its marketability.</td>
</tr>
<tr>
<td>Scrap</td>
<td><strong>Cost Approach – Book Value</strong></td>
<td>• For Scrap, the book value is tested for consistency with the applicable scrap rate prevailing in the market at the time, and accordingly adjusted keeping in view the nature of each item and its marketability.</td>
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</tbody>
</table>

### Key Points:
- Under Liquidation Scenario, freight/transportation cost as a percentage of sales is considered based on high-level industry benchmarking to calculate the higher end of Liquidation Value.
- Further, a discount of 5-10 percent is considered (wherever applicable) to calculate the lower end of Liquidation Value.
The value is developed on the basis of capitalization of the net earnings that would be generated if a specific stream of income can be attributed to an asset or a group of assets.

- Income Capitalisation
- Discounted Cash Flow

This is mainly the primary approach in valuing the investment interest.

The value of the appraised asset is estimated through an analysis of recent sales/transactions of comparable items.

- Comparison Method

This is the secondary approach in our analysis and may be applied as a reasonability test in case of ‘Value in Use’ premise.

The value is determined through fair market value of all the assets and liabilities present on the balance sheet of the subject entity and calculating the net book value.

- Net Asset Value Method

In case of the identified assets of investment interest are non-operating in nature, this approach may be applied.
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Asia Pacific: 500+ professionals

3,500+ Total Professionals Globally
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- **72%** of the 25 largest Euro STOXX companies
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- **#1** Global Fairness Opinion Provider
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- **#1** IP Litigation Consulting Firm in the U.S.
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- **Best** Cyber Security Services Provider – HedgeWeek 2018
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- **Thought Leader** in Digital Forensics, Arbitration and Investigations – Who’s Who Legal 2018
- **Forrester Wave Leader** Customer Data Breach Notification and Response Services – 2017

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1. Source: Published in Thomson Reuters’ “Mergers & Acquisitions Review - Full Year 2017.”
4. Source: 2018 IAM
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- Solvency Opinions
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  - Buy-side / Sell-side advisory
  - Industry and market scoping studies
  - Financial projections and transaction modeling

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  - Accretion/Dilution analyses
  - Carve-out analyses
  - Solvency opinions
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- Change of Control Acquisition
  - Purchase price allocation
  - Valuation and structuring of contingent consideration, earn-outs and stock-based compensation
  - Valuation of guarantees and indemnifications
  - Tax valuations

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  - Tax legal entity valuations
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  - Real estate consulting
  - Business incentives advisory
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  - Collateral valuation
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  - Fresh start accounting

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  - Sell-side due diligence
- Post Sale
  - Dispute analysis/litigation support
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- Intellectual Property Valuation
- Transfer Pricing
- Business Valuation
- Fresh Start Accounting
- Complex Securities Valuation
- Strategic Value Advisory
- Machinery and Equipment Valuation

**Alternative Asset Advisory**
- Portfolio Valuation
- Complex Asset Solutions
- Secondary Market Advisory Services

**Real Estate Advisory**
- Real Estate Valuation and Consulting
- Real Estate Restructuring
- Loan Services/Debt Advisory
- Lease Renegotiation
- Right of Way Appraisal
- Cost Segregation
- Property Asset Management and Optimization
- Transaction Due Diligence

**Fixed Asset Management and Insurance Solutions**
- Property Insurance Appraisal
- Fixed Asset Inventory and Reconciliation
- IT Fixed Asset Inventory Services
- Fixed Asset Componentization
- Property Record Outsourcing

**CORPORATE FINANCE**

**M&A Advisory**
- Fairness and Solvency Opinions
- ESOP and ERISA Advisory
- Transaction Advisory Services
- Financial Sponsors Group
- Distressed M&A and Special Situations
- Private Capital Markets

**Transaction Opinions**
- Fairness Opinions
- Solvency Opinions
- ESOP and ERISA Advisory
- Commercially Reasonable Debt Opinions

**Restructuring Advisory**
- Corporate Restructuring
- Debt Advisory
- Distressed M&A and Special Situations

**COMPLIANCE AND REGULATORY CONSULTING**

**Securities Enforcement and Examinations**

**Compliance Consulting**

**Regulatory Consulting**

**Risk and Management Company Solutions**

**Hosted Regulatory Solution**

**Regulatory Tax Advisory**

**Business Services**

**Cybersecurity Services**

**Placement and Staffing Services**

**DISPUTES AND INVESTIGATIONS**

**Arbitration**

**Commercial Disputes and Litigation**

**Global Fraud and Forensic Investigations**

**Intellectual Property Disputes and Advisory Services**

**Securities Litigation**

**Monitoring and Receivership Services**

**Restructuring, Bankruptcy and Insolvency Litigation**

**LEGAL MANAGEMENT CONSULTING**

**Contract Management**

**Global Data Risk**

**Information Lifecycle Management**

**Innovation Asset Management**

**Legal Operations**

**Managed Services**

**TAX SERVICES**

**Property Tax Services**

**Site Selection and Incentives Advisory**

**Unclaimed Property and Tax Risk Advisory**

**Tax Litigation**

**Sales and Use Tax Services**
Regulatory Affiliations

Duff & Phelps advises the world’s leading standard setting bodies on valuation issues and best practices.

- U.S. Securities and Exchange Commission
- International Accounting Standards Board
- Financial Accounting Standards Board
- Appraisal Institute
- American Institute of CPAs
- International Valuation Standards Council
- The Appraisal Foundation
- Institute of Management Accountants
Industry Expertise

Serving **Over 70%** of Fortune 100 Companies

- All Industries: 73%
- Consumer and Retail: 67%
- Energy and Mining: 71%
- Financial Services: 69%
- Healthcare/Life Sciences: 89%
- Industrials: 81%
- Technology/Telecom and Media: 72%

Serving **Nearly 70%** of Euro STOXX 100 Companies

- All Industries: 68%
- Consumer and Retail: 65%
- Energy and Mining: 58%
- Financial Services: 77%
- Healthcare/Life Sciences: 78%
- Industrials: 86%
- Technology/Telecom and Media: 31%
# Merchant Banking Services

Duff & Phelps India Private Limited is a SEBI Registered Category I Merchant Bank.

We can provide Fairness Opinions as well as valuation services in compliance with any of the following policies/Acts:

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