## VALUATION OF STARTUP

#### Presentation at Seminar on Valuation

(Organized by Ahmedabad Branch of WIRC of ICAI)

18<sup>th</sup> January, 2020





## **CONTENT:**

- 1. Start up Meaning & Characteristics
- 2. Start up India Eligibility, Registration & Benefits
- 3. Start up Funding
- 4. Start up Valuation Methods

## WHAT IS START UP?

Ideas / Technology / Research which could be Scalable Business Model

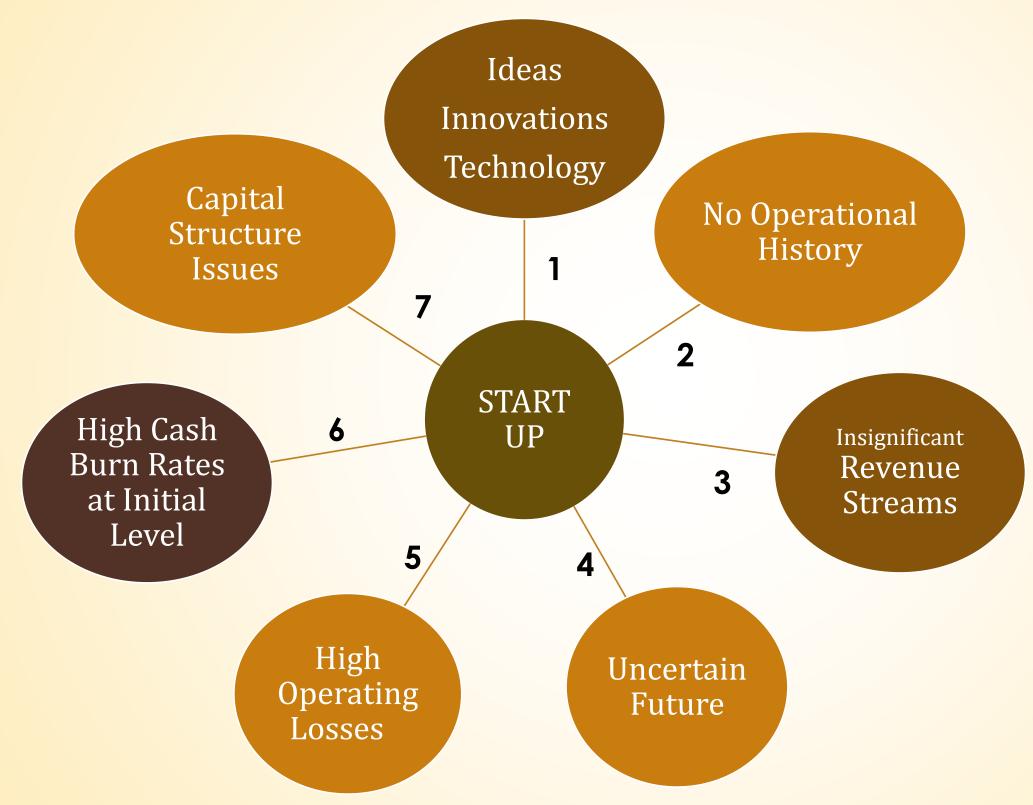
Owner of Business has an Idea that can be fill up the unfilled needs of the consumers.

Provide Solution to Numerous Users

To Convert Idea into Real Life Business Cycle

CA. Shilpang Karia

## START UP CHARECTERISTICS:



## ELIGIBILITY FOR START UP INDIA:

(Source: https://www.startupindia.gov.in)

Status

- Private Limited Company
- LLP
- Partnership Firm

**Business** 

Activities

- Innovation, Development or Improvement of product / process/services.
- Scalable Business Model with high Potential of Employment generation or Wealth Creation.

**Turnover** 

• <= Rs. 100 Crores

Period

 Can be registered as Start Up within 10 Years of Incorporation / Registration

**Exclusion** 

Splitting up or reconstruction of an existing business.

### PROCESS TO REGISTER AS START UP INDIA:

(Source: https://www.startupindia.gov.in)

Application

- Web (<u>www.statupindia.gov.in</u>) or
- Mobile App Startup India

Documents

- Incorporation / Registration Certificate
- A write up of Business Activity / Idea

Approving Authority

• DPIIT (Department of Promotion of Industry and Internal Trade)

## REGISTERED STARTUPS WITH DPIIT:



## START UP INDIA BENEFITS:

(Source: https://www.startupindia.gov.in)



#### \*Section 80IAC: - 100% of Profit / Gain from Business

- (i) Eligible Constitutions Private Limited / LLP incorporated from 01.04.2016 to 31.03.2021
- (ii) Turnover <= Rs. 25 Crores
- (iii) Allowed for any 3 consecutive years out of 7 years
- (iv) Application in Form 1 to I.T. Department.

#### \*Section 56(2)(viib) of Income Tax Act, 1961: (Exemption under IFOS if issued at a price more than fair value): -

- (i) Capital up to Rs. 25 Crores (Shares held by Non-Resident and Venture Capital Company not to be considered for this limit).
- (ii) Application in Form 2 to I.T. Department.

## \*Section 54GB: (Exemption on Long Term Capital Gain on Transfer of Residential Property):

- (i) Applicable to Individual and HUF
- (ii) Investment in Startup eligible for LTCG benefits.
- (iii) Such start up to invest such amount within 1 year in eligible asset like NEW Plant and Machinery, Computer and software for technological start ups. Vehicle and Old machineries are not considered as New Asset.

## START UP INDIA BENEFITS:

(Source: https://www.startupindia.gov.in)

[http://www.startupgujarat.in]



L	
	Incentive by Gujarat Government:
	(i) Operating Allowance : Rs. 10,000 per month for 1 Year
	(ii) Marketing Allowance : Rs. 10 lacs (One Time)
	(iii) Up to Rs. 5 lacs assistance to Institutions for Mentoring Services. (Annually)
	(iv) Up to Rs. 10 lacs for RM, equipment subject to approval. (One Time)
ITS	Self Certification in Labour Laws. (3 Environmental & 6 Labour Laws)
BENEFITS	Liberal Borrowing Norms by RBI.
3 BE	Relaxation in EMD for Government Tenders & Public Procurements.
*OTHER	Fast Track Patent Application & Up to 80% rebate in filing patents.
L0*	Faster Exit – Fast Track Corporate Insolvency Resolution Process – Within 90 days from the Insolvency commencement date.
	Other Benefits like Venture Capital Assistance Scheme, Ayurvedic Biology Program, Technology Development Program, A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship

<sup>\*</sup>Operative period for startup assistance from Gujarat Govt. expired on 31.12.2019.

<sup>\*</sup>However, extension is expected to make it in line with central govt. till 2021

## **INCUBATORS IN GUJARAT:**

(For Infrastructure and Other Supports)

#### There are 33 Incubators in Gujarat:

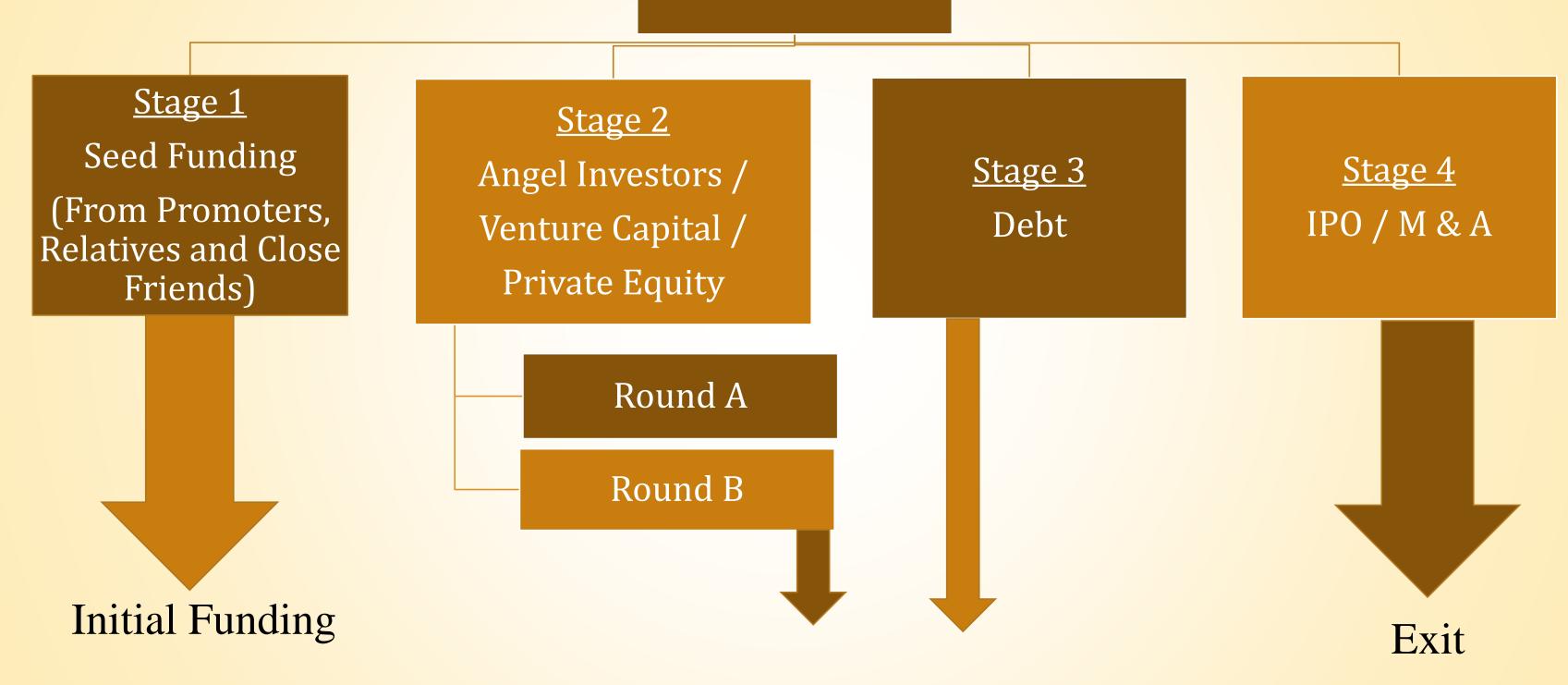
City	No. of Incubators
Ahmedabad	14
Gandhinagar	8
Rajkot	2
Anand	2
Nadiad	1
Wadhwan	1
Mehsana	1
Kadi	1
Vallabh Vidhyanagar	1
Ankleshwar	1
Baroda	1
Total	33



#### **Role of Incubators:**

- Help Entrepreneurs to Develop their Business in Initial Stages.
- Technological Facilities and Advices
- Initial Growth Funds
- Networks and Linkages
- Co-working Spaces
- Lab Facilities
- Mentoring & Advisory Supports

#### STARTUP FUNDING



Growth / Expansion

#### \*RAISING FUND THROUGH IPO FOR TECHNOLOGY STARTUP: [NSE EMERGE]

(Major Terms & Conditions)

Tract Record for 3 years

At least 20% growth in past 1 year (Financial or Non Financial)

Post issue Capital <= Rs. 25 Crores

Annual Turnover >= Rs. 10 Crores

10% of Pre-issue Capital by QIB **OR** 

10% of Pre-issue by Member of Angel Investor or PE having Investment in 25 startups – Aggregate Investment Rs. 50 Crores

## WHAT DO INVESTORS LOOK FOR IN STARTUPS?

#### □ IDEA – INNOVATIONS – TECHNOLOGY:

- Is it new? Or is it only shift from existing?
- Whether it can be separately identified / transferred / sold?
- Whether it is patented? Or capable of being patented?
- Whether control & legal right can be exercised by the company over that?
- Does it satisfy need of consumer?
- Is it a disruptive in market?
- Do they have an early mover advantage?
- Is the sector regulated? What are the risks?

#### □ PROMOTERS / FOUNDERS:

- Are they trustworthy?
- Are they capable?
- Do they have relevant experience?
- Do they have other businesses to divide focus?
- Whether this is first business activity of they have any success or failure ratio in past?
- Do they have a good management team to support their vision?
- Do they have Long term commitment?
- Do they want to commit themselves contractually?
- Do they want to sign non-competence agreement with company?
- Salary / benefit promoter / founder wants to draw till business can be converted into profit vis-à-vis their market worth.

  CA. Shilpang Karia

SVK FINVALUE ADVISORS PRIVATE LIMITED

## WHAT DO INVESTORS LOOK FOR IN STARTUPS?

#### **□** BUSINESS & INDUSTRY:

- Is the product prototype ready? Does it need further testing?
- By when commercial launch possible?
- What is progress of the product / project development?
- What are the Business Plans? & what is progress vis-à-vis Business Plans?
- Whether all type of scenario & adverse situation if any covered in Business Plan?
- Are there any direct competitors? What are their size & capacity vis-à-vis our company?
- How will those competitors react to the product?
- How big is the addressable market? How start-up can place them in the market?

#### ☐ FUNDING:

- Have the promoters put all that they have?
- How the funding pattern at each stage has been projected in Business Plan?
- What if those fund not received at later stage as per expectation of business?
- Whether promoter has any thought over potentially interested investors at each stage?
- What are the exit planning for investors? M & A / IPO etc.

#### ☐ FINANCIAL PLANNING:

- Is financial projections in line with Business Plan?
- Assumptions prepared for projections with management in-depth analysis or it is being prepared only by finance person?
- Visibility on revenue generation?
- Are in-depth forecasts prepared?
- By when and how much is the business likely to start making profits?
- Will the business require more funding going forward?
- How further funding need would be fulfilled?

## 2019 – FEW FUNDING FACTS FOR START-UPS

#### Fintech Start ups:

2018
Investment – 1.25
Billion USD
(206 funding round)

2019
Investment – 7.4
Billion USD
(180 funding round)



Highest Fund raised
By Payment based
startup
- 1.68 Billion USD
(29 Funding Round)

#### **Digital Lending Start ups:**

2018
Investment – 534
Million USD
(94 funding round)

2019
Investment – 469
Million USD
(78 funding round)

#### **Insurance Start ups:**

2018
Investment – 89.2
Million USD
(18 funding round)

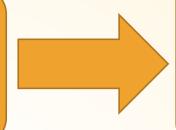
2019
Investment – 183
Million USD
(11 funding round)

**Source: Economic Times** 

## 2019 – FEW FUNDING FACTS FOR START-UPS

**Early Stage Funding Start-ups:** 

2018 Investment – 334 Million USD 2019 Investment – 693 Million USD



22% Increase in Number of deals vis-à-vis 2018.70% Increase in Average deal size.

2.6 Million USD average valuation deals size in 2019, which is 15% rise in average valuation from 2018.

In pre-revenue stage 17% start-up funded in 2019, which was 12% in 2018.

## START UP OUTLOOK FOR 2020

- Foresee correction in valuation may happen in 2020 vis-a-vis 2019 due to financial slowdown & increase in competitive in the sector.
- More merger & consolidation of start-ups likely to happen, which will build-up stronger unit economics across start-ups.
- PEs, VCs wants 1% PF fund allocation towards Alternate Investment Fund proposing for start-up's.

## TOP M&A DEALS FOR START UPS (2019):

Company	Acquired by	Acquisition Amount* (\$ Million)
Yatra	Ebix	338
Qwikcilver	PineLabs	110
Haptik**	Reliance Jio	100
Shopclues	Q0010	100
Wibmo	PayU	70
Fynd**	RIL	43
Innov 8	Oyo	32
Zefo	Quikr	29
Meru**	Mahindra & Mahindra	28

**Source : Economic Times** 

\*\* These are majority (more than 50%) Investment deals.

<sup>\*</sup> Amount has been rounded off.

## TOP FUNDING ROUNDS (2019):

Company	Funding Amount in \$	Investors
Paytm	1B	SVF, Ant Financial, TRowe Price, Discovery Capital
Oyo	700M*	SVF**, RA Hospitality
Udaan	585M	Altimeter Capital, Hillhouse, DST Global, Lightspeed, Tencent
Delhivery	413M	Fosun, The Carlyle Group, SVF, CPP Investment Bond
Ola	300M	Hyundai, Kia Motors, Steadview Capital
Ola Electric	306M	SVF, Tiger Global, Matrix Partners
Lenskart	231M	SVF, Kedaara Capital
PharmEasy	220M	Temasek, Bessemer, Eight Roads Ventures, Fundamentum, KB Global
Grofers	220M	SVF, Sequoia Capital, Tiger Global
Paytm Mall	163M	EBay
Policybazaar	152M	SVF, Tencent

Source: Economic Times

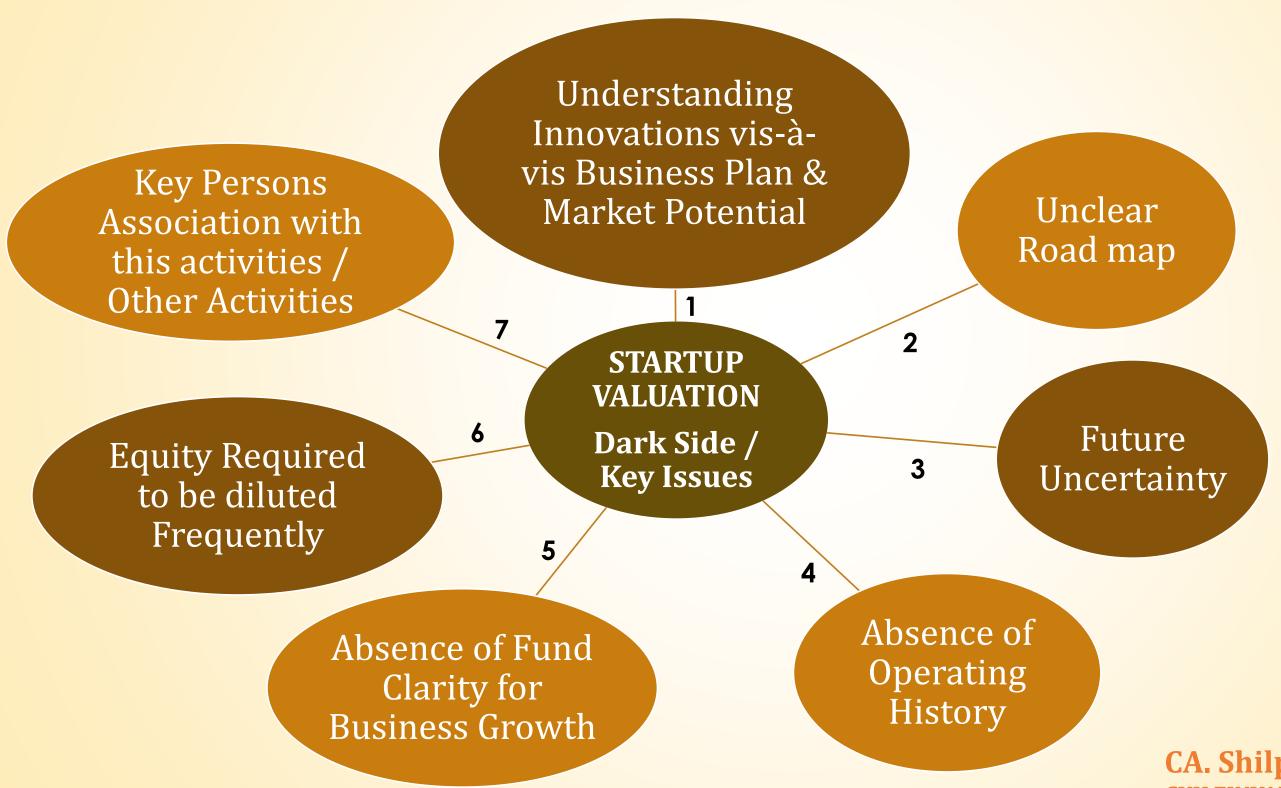
\*\* SVF is SoftBank Vision Fund.

<sup>\*</sup> Oyo Funding Round is mix of primary and secondary transactions.

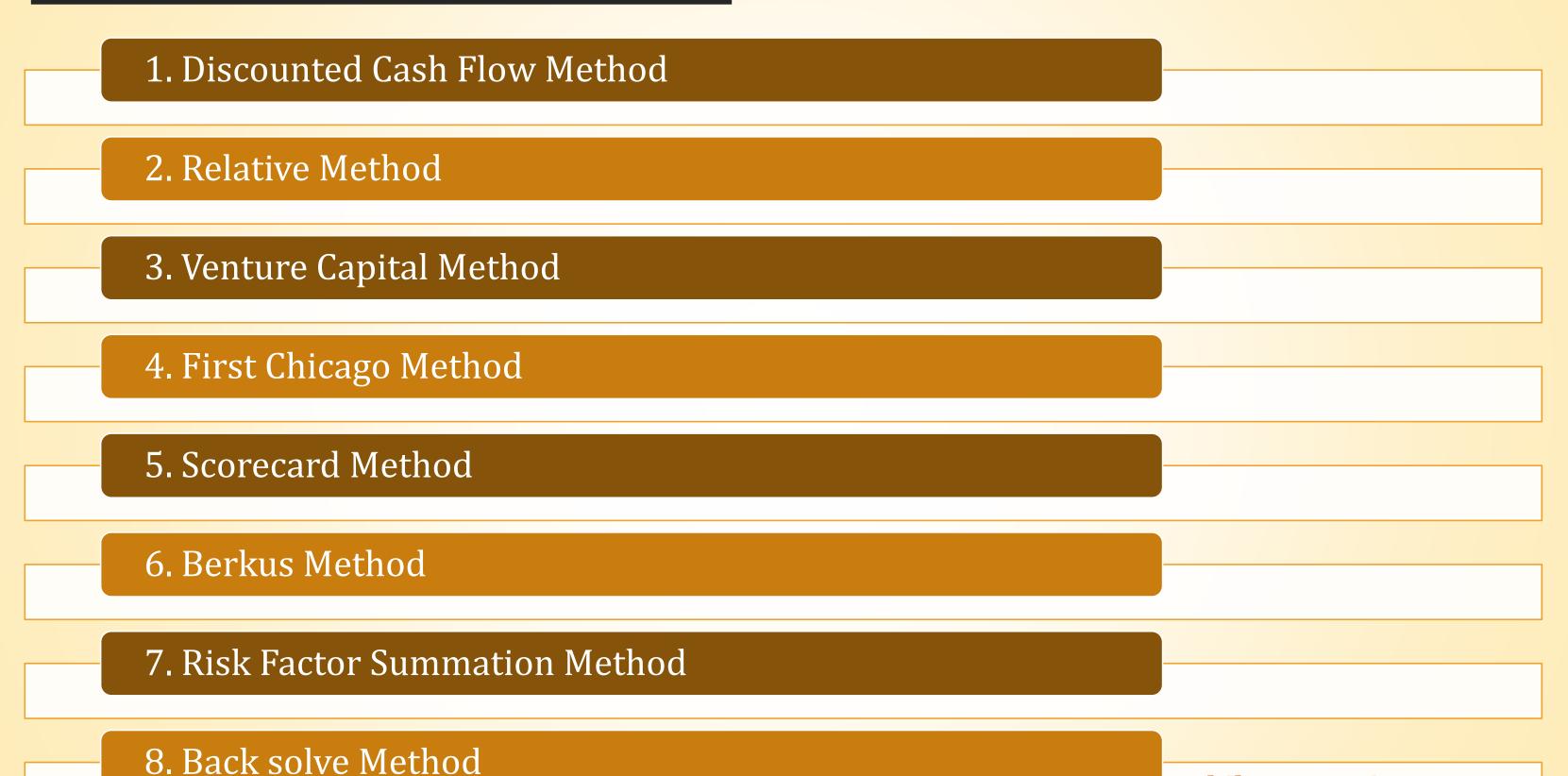
# START UP VALUATION DREAM VALUATION?



#### KEY ISSUES / DARK SIDE FOR STARTUP VALUATION



## **VALUATION METHODS:**



## 1. DISCOUNTED CASH FLOW METHOD:

Valuation based on Cash Flow Projections for Explicit Period, Capital Invested, Reinvestment Required, Discount Rate, Terminal Value. Exit Multiple etc.

Two Approaches can be used for DCF:

- (a) Top line approach (Market size-Market Share-Margins-Investment Required-Tax).
- (b) Bottom line approach (Investment-Capacity-Revenue-Margin-Tax-Reinvestment).

Key
<b>Factors</b>

Existing Assets	It represents small portion of firm's overall value. Resources can't be deployed considering that value.				
	Absence of historical data.				
	Bifurcation of Accounting Balance Sheet and Valuation Balance Sheet.				
Growth Assets	Past could not be base for estimation of future.				
	Current operating loss make difficult to project future operating margin.				
	Value is created only when return on capital is higher than cost of capital of growth assets.				
Discount Rates	Difficult to have data of start up companies & comparable transactions.				
	To apply Discount & Premiums on beta for making adjustment of liquidity & control.				
	At Initial stage, generally cost of equity becomes cost of firm.				
Terminal Value	It generally occupies major part of firm value.				
	Difficult to identify explicit period of projection & Stable Growth thereafter.				
	After explicit period, exit multiple of publicly traded firm can be used for terminal value.				

## 2. RELATIVE VALUATION:

Valuation based on CCM (Comparable company method) & CTM (Comparable transaction method).

#### **Key Factors**

What are the companies?

Young companies should be compared to young companies only in same business, however they are generally not publicly traded.

In absence of comparison with young companies, same business companies can be compared, however those firms are very different in size, risk, cash flow, growth, period of existence.

Which Multiple to use for comparison?

Generally due to loss in early life cycle, profit multiple like PE ratio & EBIDTA multiple cannot be used.

Revenue & Book value multiple are difficult to compare if at early stage revenue & book value has also not start reflecting on your financials.

Relative Valuation is easy solution to value for start-up due to estimation challenges in DCF (Intrinsic Valuation).

## 3. VENTURE CAPITAL METHOD:

It was first described by Professor William Sahlman at Harvard Business School in 1987.

It's most common approach to value young companies. It is Valuation based on expectation of venture capital investor.

Step 1

• Forecast the revenue for the period venture capital wants to invest in start-up.

Step

- Find out Equity value at the end of forecast period
- a) by Expected Earning \* Expected P/E
- b) Expected Revenue \* Expected EV/Sales.
- Business model will decide to use revenue multiple or earning multiple.

Step 3

- Discount equity value arrived as above with targeted rate of return to arrive at present value.
- Targeted Rate of Return is rate expected by Venture Capital Investor.

Step 4

- Value arrived at above is pre-money value.
- Post Money Value = Pre-money value + New capital infusion by venture capital investor.

Step 5 • Proportion of share of venture capital investor = New Capital Provided / Post Money Valuation.

## 3. VENTURE CAPITAL METHOD:

Key Factors	Used largely by venture capital funds/early stage investors for valuing start-up ventures.
	Investor will try to obtain return on its investment commensurate with Risk it perceive.
	This method starts by defining return on investment
	Objective of investor is <b>pre-determined exit date &amp; pre-determined ROI.</b>
	Generally investment are made in multiple tranches, but exit value will remain intact irrespective of investment is made in intervals.
	It focus on revenue & earning and ignore intermediate items like working capital requirements, Capex requirements, etc.
	It <b>ignores cash flow</b> , which is expected to earn after shorter period of projections.
	It considers only equity cost for discounting since venture capital expectation of return is on equity only. However when we value enterprise value by using revenue multiple, it should be discounted by cost of capital invested instead of cost of equity (venture capital investor expectation).

## VENTURE CAPITAL METHOD:

#### **Illustration:**

				(Amt in INR)	
Particulars	Scenerio 1	Scenerio 2	Scenerio 3	Scenerio 4	
Annual Earning as on date	50,00,000	50,00,000	50,00,000	50,00,000	
Growth in Earning	20%	20%	15%	18%	
No. of Years to Exit Date	10	10	15	10	
Initial Investment by Investor	20,00,000	20,00,000	20,00,000	20,00,000	
Required Rate of Return	35%	40%	30%	35%	
<b>Annual Earning as on Exit Date</b>	309,58,682	309,58,682	406,85,308	261,69,178	
P/E Multiple	12	12	15	12	
Future Value of Startup	3715,04,184	3715,04,184	6102,79,620	3140,30,136	
Value of Firm	184,76,769	128,43,499	119,22,809	156,18,296	
Equity Stake of Investor	10%	12%	14%	25%	
Current Share Outstanding	10,00,000	10,00,000	10,00,000	10,00,000	
Total Outstanding Shares	11,11,111	11,36,364	11,62,791	13,33,333	
Number of Shares owned by Investor	1,11,111	1,36,364	1,62,791	3,33,333	
Share Price	16.63	11.30	10.25	11.71	
Pre Money Valuation	166,29,092	113,02,279	102,53,616	117,13,722	
Post Money Valuation	184,76,769	128,43,499	119,22,809	156,18,296	

## 4. FIRST CHICAGO METHOD:

- The First Chicago Method was developed by, and consequently named for, the venture capital arm of the First Chicago bank.
- It is a hybrid between Discounted Cash Flow and Multiple-based approach.

Step 1 • Prepare projected Financial statement of the company & arrive at future profit / cash flow under 3 various scenario as "Best case", "Worst case" and "Base case".

Step 2

• Find out present value under each scenario.

Step 3

• Find out Comparable Companies / Comparable Transactions based on their business model and Size and calculate their Market multiple to arrive EV.

Step 4

• Apply it to target company. (EV/EBIDTA, Sales Multiple, PE Multiple, Non-financial multiple).

Step 5

• Assign Probability estimates to each scenario based on the stage of development and qualitative factors.

Step 6

• Carry out weighted average calculation based on NPV under each scenario & probability factor of each scenario.

Step 7

• Arrive at Enterprise value & Equity value of target company based on that.

## 4. FIRST CHICAGO METHOD:

#### **Key Factors**

It tries to capture the risk involved in projections of future cash flows at various scenarios being "Best case", "Worst case" and "Base case".

Method requires lengthy calculation to calculate DCF value of all scenario & at end It arbitrarily put weighted average of all the scenario.

## FIRST CHICAGO METHOD:

#### **Illustration:**

(Amt in Crore Rs.)			
Particulars	Success (Best)	Survival (Base)	Failure (Worst)
Projected sales of the Company for year ended 2020	100	75	50
Projected PAT of the Company for year ended 2020 (20% of Sales)	20	15	10
Present Value Factor [10%]	0.91	0.91	0.91
Adjusted Revenue of the company	18.18	13.64	9.09
Industry Adjusted Average (P/E Multiple)	12	12	12
Value of Operations of the company as per CCM	218.18	163.64	109.09
Probability of each scenerio	25%	50%	25%
Weighted Average Net Present Value	163.64		

## 5. SCORECARD METHOD:

- Scorecard method also known as Bill Payne's method.
- It is one of the most prevalent method used by angels to value an early stage start-up.

Step 1

• **Identify the Value Driver** (Strength of the Management, Team, Size of the Opportunity, Product/Technology, Competitive Environment, Marketing/Sales Channels/Partnerships, Need for Additional Investment, others if any) along with their weight %.

Step 2

• Assign Target Company score Between -2 to +2 (1 being average, <1 being below average and >1 being above average).

Step 3

• The said scores are multiplied with the corresponding weights to arrive at a **weighted average factors** (Adjusted factor).

Step 4

• Find out the comparable company across similar sectors for which pre-money valuation has already been arrived at & average out sector valuation.

Step 5

• Assign Adjusted Factor to Average valuation of comparable company arrived as above to arrive Pre-money valuation of Target Company.

## 5. SCORECARD METHOD:

#### **Key Factors**

This method gives more weightage to the quality of the startup as of today rather than the uncertain sales which it can generate in the future.

However, it is not free from bias as the value is more or less dependent on the judgement of the valuer.

The method requires one to first arrive at a range of comparable companies

## **SCORECARD METHOD:**

#### **Illustration:**

Value Driver	Weight	Target Company's Score	Factor	Comment
Strength of the Management				
Team	30%	0.9	0.27	Improvement needed
Size of the Opportunity	25%	1.25	0.31	Achievable
Product/Technology	15%	1.25	0.19	Patented
Competitive Environment	10%	1.6	0.16	Less Competition
Marketing/Sales				
Channels/Partnerships	10%	0.3	0.03	Weak sales network
Need for Additional Investment	5%	0.12	0.01	High
Other	5%	1	0.05	Average
	100%		1.02	

Comparable Company	Pre-Money Valuation
A	230,00,000
В	420,00,000
С	120,00,000
D	60,00,000
E	130,00,000
Average	192,00,000
Adjusted Factor	1.02
Pre Money Valuation of your venture	195,07,200

## 6. BERKUS METHOD:

- Berkus method was first introduced by Mr. Dave Berkus, a renowned author and startup angel investor from California.
- This method supposes that once a company starts generating revenue, this method is no longer applicable, as everyone
  will use actual revenues to project the value of the startup.

Step 1

• The maximum value that can be attributed to the firm is \$2.5 Million post rollout. The top line to be achieved in the 5th year is \$20 Million. Maximum value attributable to the firm is 12.5% of its expected revenue in the 5th year.

Step 2

• As per Indian Scenario project the 5th year revenue of the startup. The maximum value that can adopted will be 12.5% of the said revenue.

Step 3

• The value so arrived can be divided by 5 to account for the parameters mentioned in the Berkus method as: a) Sound Idea b) Prototype c) Quality Management Team d) Strategic Relationship e) Product Rollout or Sales.

Step 4

• Bifurcate same into 0%, 20%, 40%, 60%, 80%, 100%.

Step 5

• Assign to maximum value of each parameters.

## 6. BERKUS METHOD:

#### **Key Factors**

Once a company starts generating revenue, this method is no longer applicable, as everyone will use actual revenues to project the value of the start-up.

It arbitrarily projects maximum value can be assigned as 12.5% of the 5<sup>th</sup> year revenue, without considering, profitability margin, investment & reinvestment required, cash-flow generation possible etc.

## BERKUS METHOD:

#### **Illustration:**

1									
Revenue expected in 5 years	3000,00,000								
Maximum value @ 12.5% of Sales	375,00,000								
		Maximum							
If Exists	Parameter	value	0	1	2	3	4	5	Total
			0%	20%	40%	60%	80%	100%	
Sound Idea	Basic Idea	75,00,000			٧				30,00,000
Prototype	Reducing Technology Risk	75,00,000				V			45,00,000
Quality Management Team	Reducing Execution Risk	75,00,000					V		60,00,000
Strategic Relationship	Reducing Market Risk	75,00,000		٧					15,00,000
Product Rollout or Sales	Reducing Production Risk	75,00,000			٧				30,00,000
Maximum value to be adopted		375,00,000							180,00,000

## 7. Risk Factor Summation Method:

- This method was first described by the Ohio TechAngels.
- It can be described as a combination of both Scorecard as well as the Berkus method.
- It considered a much wider set of risk factors in arriving at a pre-money valuation giving regard to qualitative factors intrinsic in the start-up.
- This method forces investors to think about various types of risks.

Ster 1

• Find out pre-money valuation of the company. Say at pre-defined multiplier to total Revenue.

Step 2

• Put 12 Risk parameter (Management, Stage of the startup, Legislation/Political risk, Manufacturing risk, Sales and marketing risk, Funding/capital raising risk, Competition risk, Technology risk, Litigation risk, International risk, Reputation risk, Potential lucrative exit) in column.

Step 3

• Pre-decide value of 'Total Parameter' say at % of total Revenue for evaluation purpose.

Step 4

• Divide that Total Parameter with 12 Risk factor.

Step 5 • As Risk parameters provided to assess the start-up. The parameter needs to be given range of point from -2 to +2, based on start-up evaluation where it stands.

Step 6

• Give weightage of total parameter value for particular Risk to point given.

Step

• Make total of all such Risk Parameter weightage.

Step

- Reduce / Add to Pre-Money Valuation.
- Pre-money valuation is adjusted for such evaluation of risk factors.

## 7. Risk Factor Summation Method:

#### **Illustration:**

Particulars	Value (INR)
Revenue of the 5th year (Assumed)	25,00,000
Multiplier (P/E Ratio assumed for Valuation)	12
Pre-Money valuation	300,00,000

Risk Parameter Value Assumed 1.25% of Revenue	31,250
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Pre-Money Valuation	300,00,000
Less: Risk Summation	1,25,000
Risk Adjusted Pre-Money valuation of the startup	298,75,000

Risk Factor	Rating [A]	Risk Parameter Value [B]	Risk Weighted Value (INR) [C=A*B]	Comment
Management	2	31,250	62,500	Very Efficient
Stage of the startup	1	31,250	31,250	Prototype functions
Legislation/Political risk	1	31,250	31,250	Low
Manufacturing risk	-2	31,250	-62,500	Subject to Government Norms
Sales and marketing risk	1	31,250	31,250	Good sales team in place
Funding/capital raising risk	2	31,250	62,500	Low
Competition risk	0	31,250	-	Average
Technology risk	-1	31,250	-31,250	Subject to technological obsolescence
Litigation risk	-1	31,250	-31,250	Alternative of Patented technology exists
International risk	1	31,250	31,250	Low
Reputation risk	-2	31,250	-62,500	Individual entity
Potential lucrative exit	2	31,250	62,500	Buyers in the market exist
Risk Summation	4		1,25,000	

## 8. Backsolve Method:

- Backsolve method which is a variant of Option Pricing Model.
- The Backsolve method uses Black-Scholes-Merton option pricing equation to estimate the value of the start-up.
- One of the lesser known valuation methodology used in startup valuation.
- The first step involves determining the claims on the equity value and the resulting "breakpoint" at which different securities would benefit.
- It is presumed that preference share will exercise at particular price breaches only.
- The Risk Free Rate, Volatility of comparable companies & expected time to exit are used as input Black-Scholes-Merton Model. This is the method generally used for option valuation.

#### Formula:

$$C = SN(d_1) - N(d_2)Ke^{-rt}$$

$$C = \text{Call premium}$$

$$S = \text{Current stock price}$$

$$t = \text{Time until option exercise}$$

$$K = \text{Option striking price}$$

$$r = \text{Risk-free interest rate}$$

$$N = \text{Cumulative standard normal distribution}$$

$$e = \text{Exponential term}$$

$$s = \text{St. Deviation}$$

$$\ln = \text{Natural Log}$$

$$\ln \left(\frac{S}{K}\right) + \left(r + \frac{s^2}{2}\right)t$$

$$d_1 = \frac{\ln\left(\frac{S}{K}\right) + \left(r + \frac{s^2}{2}\right)t}{s \cdot \sqrt{t}}$$

"Valuation is starting point of negotiation – Final price is only result of negotiation"

# THANK YOU

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