

Beyond the Pages

1. DEBIASING THE CORPORATION

Corporate decision making is often contaminated by a variety of biases. McKinsey consultants Tim Koller, Dan Lovallo, and Olivier Sibony have written extensively about these biases in a series of articles that appeared in various issues of *McKinsey on Finance* and *McKinsey Quarterly*. They and others have offered a number of useful suggestions for combating these biases. Here are the more important of these suggestions.

1. Combine inside view with outside view
2. Be objective about budgets
3. Resist the allure of glamour projects
4. See strategy alternatives in the momentum case
5. Check sunk cost fallacy with contingency planning
6. Counter groupthink with premortem
7. Know when to kill a project
8. Get both sides of the story
9. Avoid snap judgements
10. Build a momentum case
11. Guard against competitor neglect
12. Lift your head from the sand
13. Don't steer your strategy by the wrong star
14. Check reverse financial engineering

1. Combine Inside View with Outside View The appraisal of strategy and projects is often biased on account of overconfidence, confirmation bias, illusion of control, representativeness bias, availability bias, anchoring, herding, affect heuristic, groupthink, and sunk cost fallacy.

To deal with biased appraisal of strategy and projects, combine inside view (which is very appealing) with outside view (which is rational). The inside view looks at a problem by focusing on the specific task, drawing on information that is close at hand, and making predictions based

on that narrow and unique set of inputs, which include anecdotal evidence and wrong perceptions.

It's natural to be drawn to the inside view. It's usually concrete and filled with engaging detail we can use to craft a story about what is going on.

The outside view is typically abstract, bare, and doesn't lend itself so readily to storytelling. Yet it is essential to consider the outside view as an antidote to the bias-inducing inside view..0

2. Be Objective about Budgets Companies are slow to shift resources between and among business units. An extensive McKinsey study found that each year the proportion of company's capital expenditures in each business unit was highly correlated to the previous year's proportion.

Such stickiness is due to anchoring. It is a psychological phenomenon in which a number, however irrelevant it may be, influences the judgement of people. Daniel Kahneman and Amos Tversky carried out a famous experiment called the "Wheel of Fortune" experiment in 1974 to demonstrate the phenomenon of anchoring. Participants in this experiment were shown the number generated by the Wheel of Fortune and then asked what percentage of African nations were members of the U.N. The answers given by them were influenced by the random number thrown up by the Wheel of Fortune, although it had no relevance whatsoever to the questions asked.

Thanks to anchoring, budgeting in most organisations tends to be an incremental exercise. Despite extensive discussions, next year's targets are not likely to be very different from the ones business units proposed at the beginning of the budget process.

What is the remedy? Since an anchor is such a powerful influence, another anchor is required to overcome it. To see how it works suppose that you are entrusted with the task of setting your company's sales targets for different regions. Instead of beginning with the previous year's targets, you can as Tim Koller, Dan Lavallo, and Oliver Sibony suggest take the following steps to reanchor yourself.

Step 1: Identify key fact – based non-historical criteria for setting sales targets. This might include factors like market growth over a period of time, the company's present market share, and the number of sales representatives in the company relative to competitors.

Step 2: Build and calibrate a forecasting model based on these criteria You can perform regression analysis using the variables identified in Step 1 as independent variables to explain historical sales.

Step 3 Use the model as a second anchor. The model can be used to forecast the sales for the following year. The output of the model can be used as a second anchor to change the dynamics of the target-setting discussion.

3. Resist the Allure of ‘Glamour’ Projects Suppose you are the manager in a telecommunications company, and you have a choice to make between overseeing the systematic repair of cell towers and managing the company’s launch of a next- generation smartphone. Most likely you will choose the opportunity of leading the launch of a new generation smart phone (a glamorous project) rather than overseeing the repair of cell towers and other equipment (a mundane project).

In most organisations, glamorous projects attract undue attention and investment commitment whereas mundane projects (like a maintenance project) tend to be neglected and receive inadequate investment.

This happens for three reasons. First, sexy new projects are inherently more exciting than routine maintenance projects. Second, as far as the existing projects are concerned, the only news is usually bad news – products are taken over by competing brands or equipment’s needs to be replaced entailing significant costs. Third, many companies have separate funding committees for new projects and maintenance projects. When funds are limited, as they often are, new projects get priority, even though both types of projects can contribute significant value.

What is the remedy? One oil and gas company realised that maintenance was getting short shrift vis- a- vis extraction. To redress this situation, it assigned two executives who were members of the extraction committee to be members of the maintenance committee as well. This ensured that maintenance projects received the resources and attention they justified. This approach can be applied to most companies in capital – intensive industries such as power, telecommunications, and chemicals where committees that examine capital expenditures are distinct from those that review operating expenditures. According to Inskandar Aminov, Aaron De Smet, and Dan Lavallo, creating overlapping committees, which convene regularly and give voting rights to members from different parts of the organizations, can help companies surmount bureaucracy and break down siloes.

4. See Strategy Alternatives in the Momentum Case One way to incorporate the outside view is to construct a momentum case along with the base- case and other scenarios. A momentum case represents what could happen if a company takes no, or limited, strategic view. A momentum case is built by using external variables like market share, reactions of competitors and changes in cost structure. A momentum case helps in setting more realistic performance targets, reveals the potential negative consequences if the company takes only limited or no strategic action, and suggests investments necessary to just to keep the current business going.

5. Check Sunk Cost Fallacy with Contingency Planning Traditional economics assumes that while making a decision, people ignore past costs and consider only the present and future

costs and benefits associated with that decision. In reality, however, people routinely consider historical costs when making decisions about the future. Such behaviour is called the **sunk-cost effect**. It may be viewed as a tendency to continue an endeavour, once an investment of money, time, or effort has been made.

To mitigate sunk cost fallacy, **contingency planning** must be done. In contingency planning, future possibilities are envisaged and the actions to be taken in these possibilities are predetermined and put down explicitly on a contingent road map. The whole idea of a contingent road map is to pre- identify the actions to be taken under various scenarios. The actions, of course, will include the abandonment option. This helps in overcoming sunk cost fallacy and endowment effect.

6. Counter Groupthink with Premortem Groupthink occurs because a desire for conformity leads to collective confirmation bias and group members are reluctant to share information or challenge proposals made by others.

According to Hershey Shefrin groupthink can be checked by:

- Asking group members to refrain from stating their positions at the beginning of the discussion.
- Explicitly encouraging debate, disagreement, and information sharing.
- Designating one member of the group to be a devil's advocate for each major proposal.
- Regularly inviting outside experts to attend meetings, with the charge that they challenge the group to refrain from meek conformism.

Using Premortem People prefer harmony over conflict. This leads to social biases like groupthink and sunflower management. Group think involves striving for consensus at the expense of a realistic evaluation of alternatives. Sunflower management is the tendency for groups to align with the opinions of their leaders.

Thanks to these social biases, people do not express their reservations candidly and forcefully. They do not want to disrupt harmony by trying to surface potential problems. As a result, an objective and balanced appraisal of decision alternatives is compromised.

How can people be encouraged to express contrary views freely? Psychologist Gary Klein suggests the use of the premortem technique. It is a sneaky way to get to motivate people to serve as a devil's advocate without encountering resistance. If a project turns sour, some lessons will be learned about why the project failed and what went wrong as in the case of a medical postmortem. Why don't we invert the process? Before the project starts, someone should say, "We have a crystal ball that can predict the future. Our crystal ball says that the project has failed. It has been a fiasco. Now everyone should take few minutes and write down all the reasons why he thinks the project failed." This will encourage people to think of insightful reasons why this project might fail. There will be an interesting competition among

people to come up with potential problems that others many have overlooked. The entire dynamics would change. Instead of avoiding things that might disrupt harmony, people will try to surface potential problems.

Daniel Kahneman regards premortem as a great idea. He says “My guess is that, in general, doing a premortem on a plan that is about to be adopted won't cause it to be abandoned. But it will probably be tweaked in ways that everybody will recognise as beneficial. So the premortem is a low-cost, high-pay off kind of thing.”

7. Know When to Kill a Project Several studies have shown that business leaders are disinclined to kill projects. Companies and individuals that have a successful track record find it harder to terminate projects because they have an ingrained belief they can make every project a success, as long as people work hard enough. They believe more in the person sponsoring the project than in the inherent merits of the project. This belief is compounded by sunk cost fallacy this means that managers who are evaluating projects assign greater weightage to the costs incurred in the past compared to costs to come.

To counter these tendencies, companies must designate a full – time “project killer”, a person who has a deep technical knowledge of the technology and business aspects of the industry, to prevent project creep. As Tim Koller, J. Andr’e de Barros Teixeira and Dan Lovallo put it, “Companies absolutely need to invest in new ideas. They must be entrepreneurial and imaginative. But they also need to adopt mechanisms that take some of the emotion out of their resource – allocation decisions.”

8. Get Both Sides of a Story In most meetings, people rarely speak until the leader has spoken. Further, they feel more comfortable in endorsing rather than challenging, the leader. This is called the “sunflower bias.” Compounding this bias is the tendency of leaders to hammer their ideas, even in face of negative information.

One way to mitigate these biases is to assign two independent groups or individuals (a red team and a blue team) the task of representing opposite sides on a decision being evaluated. The teams present their arguments in a mutually agreed- upon format and time frame. After that the decision makers voice their opinions. Warren Buffett uses this approach. When considering his biggest acquisitions, he generally hires two investment advisers one to argue in favour of the deal and the other to argue against it. Buffett listens to arguments from both sides before taking the final decisions. The advisers are compensated on the basis of the final decision.

9. Avoid Snap Judgements Important choices, personal and professional, are often subject to **halo effect** which is the human tendency to make inferences on the basis of a general impression. Thus, when a company is doing well financially, observers conclude that it has an innovative strategy, a visionary CEO, a motivated workforce a vibrant culture, superb customer orientation, and so on. When a company's performance falls, people are quick to infer that it

has a flawed strategy, a confused CEO, a complacent workforce, a stifling culture, an apathy toward customers, and so on.

Our desire for excessive coherence (or the need to fit complicated ideas into simple mental frames) prompts us to draw conclusions faster than we should.

To mitigate the effect of halo effect in business decisions, executives should first acknowledge their intuitions and then take a minute to ask themselves. “If I set aside my first impressions, what judgement would I make? “This s like a blind taste test, in which the consumers can say what they really think without the strong glow of a brand’s halo.

10. Build a Momentum Case Executives tend to be overly optimistic about their existing projects and seek to maintain the status quo. They rely on their own perceptions of the market and use internal data to build forecasts and set use internal data to build forecast and set strategy. They rely on what researchers call the “inside view.” They fail to ask hard questions about market dynamics and competitive behaviour or what the researchers call the “outside view.”

One way to inject the outside view into strategy discussions is to **build a momentum case** to be considered alongside a base case and other forecasting scenarios. A momentum case is an objective evaluation of industry growth and competitive dynamics. It is based on using external variables, like market share, reactions of competitors, and changes in cost structure. A momentum case can help in setting more realistic performance targets, pointing out gaps in product portfolios, suggesting investments necessary to keep the current business going, and revealing possible negative consequences, if the company takes only limited or no strategic actions.

11. Guard Against Competitor Neglect Given the interdependent nature of strategic decisions, companies usually pay a steep price when they fail to anticipate the actions and reactions of competitors. The neglect of competitors is a manifestation of the **inside view**, in which decision makers are guided by their own data and subjective perceptions than by external factors and objective, statistical view.

An effective hedge against competitor neglect can be war games these are exercised in military to determine how well they are likely to perform given the responses of opponents. Such exercises enable business leaders to assess how well potential strategies are likely to perform given potential responses of competitors.

12. Lift Your Head from the Sand Research suggests that in a group setting many members may ignore the information presented to them or interpret it in such a way that potentially troubling implications may be glossed over. Such a cognitive bias is called the “ostrich effect,” meaning that people figuratively put their heads in the sand and avoid unpleasant information.

One way to counteract **ostrich effect** in business conversations is to employ a **readout process**. According to McKinsey consultant Eileen Kelly Rinaudo, there are typically five steps in a readout process.

1. Syndicate an agenda early
2. Designate a scribe
3. Capture critical points for each items of the agenda
4. Share the critical points with full group
5. Get verbal confirmation from all members

As Rinaudo says, “Plainspoken and practical, the readout process imposes accountability on everyone in the room and can reduce the risk of misinterpretation during business meetings.”

13. Don’t Steer Your Strategy by the Wrong Star Business leaders often rely on analogies. However, if the analogy is weak or similar to the issue at hand in a very superficial way, there is a real risk of anchoring themselves to misleading solutions.

How can business leaders avoid superficial or “false” analogies? One way is to engage in **similarity mapping**. This exercise should be conducted by a dedicated team that prompts business leaders to identify structural similarities between the apparently similar problem from another context (the source problem) and the actual problem the company faces (the target problem). By doing so, business leaders can determine the conditions that must be satisfied for the analogy to make sense in the new context and then fin tune the proposed solution.

14. Check Reverse Financial Engineering Most organisations use reasonably well-defined quantitative indicators (such as IRR being more than 20 percent or accounting rate of return being more than 25 percent) for approving or rejecting project proposals. Since a project sponsor is keen to get his project included in the capital budget, he is likely to massage the numbers and dress up his project proposal to satisfy the organisational norms. It is fairly easy to do so, by merely tweaking some assumption or the other. In most cases there are 8 to 10 assumptions (such as market size, market share, selling price, raw material cost, project life, growth trajectory, and so on) underpinning the financial projections. Often, the desired financial numbers can be obtained by modifying a few of these assumptions by just 1 to 3 percent. Thanks to informational asymmetry – project sponsors often know much more than project approvers – the project approvers may not be able to detect the nature of financial manipulation.

Is there some way by which such financial manipulation can be checked. Rita Gunter McGrath and Ian MacMillan have suggested a process they call discovery-driven planning that has the potential of improving the quality of anlaysis. Discovery-driven planning reverses the sequence of the steps in the stage-gate process. Its logic is fairly simple. Since the project sponsors know

how good the numbers should be to get the project approved, why go through the farce of making and revising assumptions to get the desired set of numbers? Instead, start with the minimal acceptable revenue, income, and cash flow statement and then ask “what assumptions must be fulfilled to get these numbers.” The project sponsor is expected to develop an assumptions checklist – a list of assumptions that must be valid for the project to succeed. McGrath and MacMillan refer to this as the “reverse income statement.” If a critical assumption is not proved to be valid, the project sponsor must modify its strategy until all the underlying assumptions are valid. If no set of plausible assumptions supports the numbers, the project is rejected.

How is discovery driven planning better than the traditional method of project planning? The traditional method focuses the spotlight on financial projections, while obfuscating the assumptions. But there is no need to shine the spotlight on the numbers as the desirability of attractive numbers has never been questioned. By contrast, discovery-driven planning focuses the spotlight on the assumptions that reflect the key uncertainties, a place where senior managers need illumination.

Championing the cause of discovery-driven planning, Christensen et.al argue in a January 2008 HBR article: “Today, processes like discovery-driven planning are more commonly used in entrepreneurial settings than in the large corporations that desperately need them. We hope .. we’ll persuade established corporations to reassess how they make decisions about investment projects.”

2. REFLECTIONS ON STRATEGIC INVESTMENT DECISIONS

- 1.** Capital allocation decisions have the highest impact on value creation. No wonder these decisions agonise the CEOs and CFOs the most.
- 2.** Strategy, business model, and resource allocation are closely intertwined.
- 3.** There is no formula or theory for strategy creation.
- 4.** Strategy debate is usually guided by matrices and checklists.
- 5.** Business firms invest in strategies, not projects.
- 6.** Strategic investment programme comprises of a series of interdependent investments.
- 7.** Successful strategies and business models may be regarded as lucky foresights.
- 8.** DCF analysis provides a partial discipline to capital allocation process.
- 9.** Investment decisions often have real options embedded in them
- 10.** Real options are more valuable when uncertainty is high and managerial flexibility is considerable.
- 11.** Strategic investment decisions are often acts of faith.
- 12.** Managerial whims and preferences color strategic investment decisions.
- 13.** Most firms are multi-business firms in which there is keen competition among various businesses to claim a larger share of the corporate capital budget.
- 14.** In recent years, intangible assets have received more attention and deservedly so.
- 15.** Development expenses need to be managed well.

3. REFLECTIONS ON CAPITAL BUDGETING PRACTICES

1. Many years ago, project proposals used to be thought of almost in isolation. Now companies ensure that the business plan has to make sense and within the business plan the individual appropriations also have to make sense. This leads to a process where there is a certain amount of moving back and forth between the business plan and the specific appropriation requests.
2. In economics and finance, very sophisticated quantitative tools have been developed for decision making. These methods assume that the decision makers are rational optimisers who have reliable information to guide them. Real life managerial decisions are not rational optimisations. Rather they are subjective judgments made with limited and biased information in an environment of high uncertainty.
3. The cost of capital is estimated periodically by a variety of methods. In most companies it is in the range 12% - 15%. In real life, that figure is used mainly as a first screen to filter out a lot of bad ideas. Beyond that, the capital budgeting process is mostly driven by capital rationing and so the actual hurdle rate is rarely published or advertised.
4. Companies find it difficult to deal with uncertainty. High hurdle rates are one approach, but they are not very satisfying intellectually. Instead of risk- adjusting the hurdle rate (or cost of capital) it may be better to work with cash flows and come up with three estimates- the best case, the worst case, and the most likely case.
5. Internal rate of return can be misleading. The modified internal rate of return (some practitioners call it the terminal rate of return) has much to commend itself. It is a rate of return measure which is consistent with the net present value.
6. Doing meaningful post- audits is not easy. Due to the difficulty of disentangling the various causes of actual performance often superficial answers are accepted.

4. ANALYSIS WHEN THE CASH FLOWS ARE PARTIALLY CORRELATED

Dr. Bhanu Shireesha

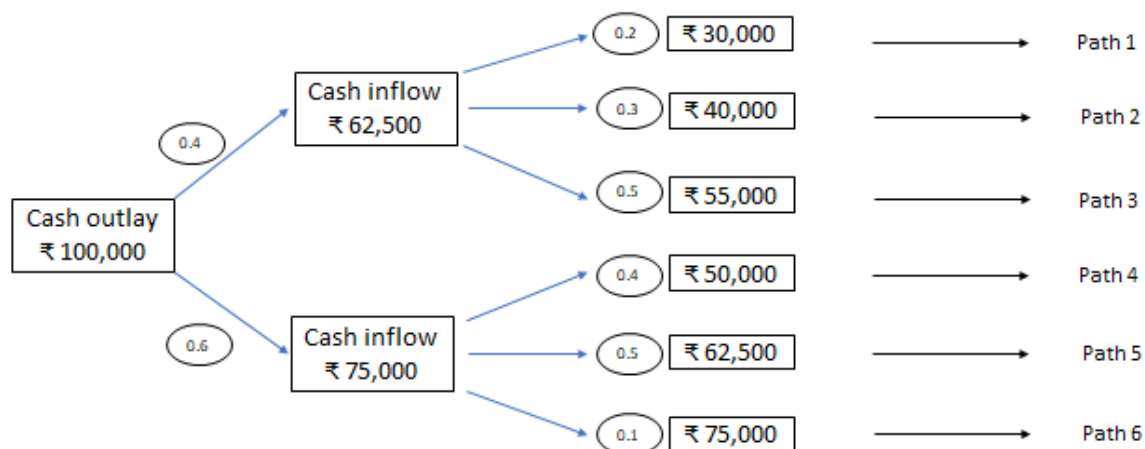
In section 11.2 of the book we discussed how the expected NPV and standard deviation of NPV are calculated when the cash flows of different years are uncorrelated or perfectly correlated. In this note we discuss the calculation of expected NPV and standard deviation of NPV when the cash flows are partially correlated. Cash flows are partially correlated, when the level of cashflows in the initial years would partially influence the cashflows in the subsequent years. This kind of scenario is quite different that the previous two cases, where the subsequent cashflows are either fully dependent or completely independent. Generally, this scenario is applicable to businesses where a product variant's success or failure, brand's acceptance or rejection, capturing of higher or lower market share, is probabilistic. Generally, this model can be applied if the performance in the initial years of a project would influence the performance in its subsequent years.

Example: A firm has an investment proposal requiring an outlay of ₹ 1 lakh. The investment has a 2-year life at the end of which there is no salvage value expected. The following table gives the expected cashflows at the end of years 1 and 2 along with the likely probabilities of their occurrence.

	Year 1	Probability	Year 2	Probability
Cashflows	₹ 62,500	0.4	₹ 30,000	0.2
			₹40,000	0.3
			₹ 55,000	0.5
Cashflows	₹ 75,000	0.6	₹50,000	0.4
			₹62,500	0.5
			₹75,000	0.1

The firm uses 12% discount rate for investment of this nature and the risk-free rate of return in the country is 6%. You are required to (a) construct a tree of possible paths of cashflows for the proposed investment project; (b) find the worst and best possible values of NPV and their probabilities; (c) find the expected net present value; (d) find the standard deviation of the project?

Solution: (a) Tree showing paths of cashflows for the proposed investment project



From the tree of possibilities, we can see that there are 6 possible outcomes. In the following table, the present values of cashflows are calculated at 12% discount rate, and the project has the following expected net present values:

Statement showing the Net Present Values for all paths:

Path	Cash flows Year 1	Discount factor for Year 1	Present Value of Cashflows Year 1	Cash flows Year 2	Discount factor for Year 2	Present Value of Cashflows Year 2	Total Cashflows	Initial Cash outlay	NPV
	a	b	c = (a*b)	d	e	f = (d*e)	g = (c+f)	h	i = (g+h)
1	62500	0.8929	55806.25	30000	0.7972	23916	79722.25	-100000	-20277.8
2	62500	0.8929	55806.25	40000	0.7972	31888	87694.25	-100000	-12305.8
3	62500	0.8929	55806.25	55000	0.7972	43846	99652.25	-100000	-347.75
4	75000	0.8929	66967.5	50000	0.7972	39860	106827.5	-100000	6827.5
5	75000	0.8929	66967.5	62500	0.7972	49825	116792.5	-100000	16792.5
6	75000	0.8929	66967.5	75000	0.7972	59790	126757.5	-100000	26757.5

(b) The project has an 8% probability of realizing the worst outcome in path 1, which has cashflows of ₹ 62,500 in year 1 and ₹ 30,000 in year 2. The outcome of path 1 shows a negative NPV of ₹ 20,277.80. There is a 6% probability that the project will realize the best outcome in path 6, which has cashflows of ₹ 75,000 in year 1 and ₹ 75,000 in year 2. The outcome of path 2 shows a positive NPV of ₹ 26,757.50.

(c) Statement showing the expected Net Present Value for the project:

Path	NPV	Probability of Year 1	Probability of Year 2	Joint Probability	Jt. Prob. * NPV
1	-20277.8	0.4	0.2	0.08	-1622.22
2	-12305.8	0.4	0.3	0.12	-1476.69
3	-347.75	0.4	0.5	0.2	-69.55
4	6827.5	0.6	0.4	0.24	1638.6
5	16792.5	0.6	0.5	0.3	5037.75
6	26757.5	0.6	0.1	0.06	1605.45
				Exp. NPV	5113.34

(d) Statement showing the standard deviation of the project:

Path	NPV	Joint Probability	Expected NPV	Deviation	Variance	Variance* prob
1	-20277.75	0.08	-1622.22	-25391.09	644707451.4	51576596.11
2	-12305.75	0.12	-1476.69	-17419.09	303424696.4	36410963.57
3	-347.75	0.2	-69.55	-5461.09	29823503.99	5964700.80
4	6827.50	0.24	1638.6	1714.16	2938344.506	705202.68
5	16792.50	0.3	5037.75	11679.16	136402778.3	40920833.49
6	26757.50	0.06	1605.45	21644.16	468469662.1	28108179.73

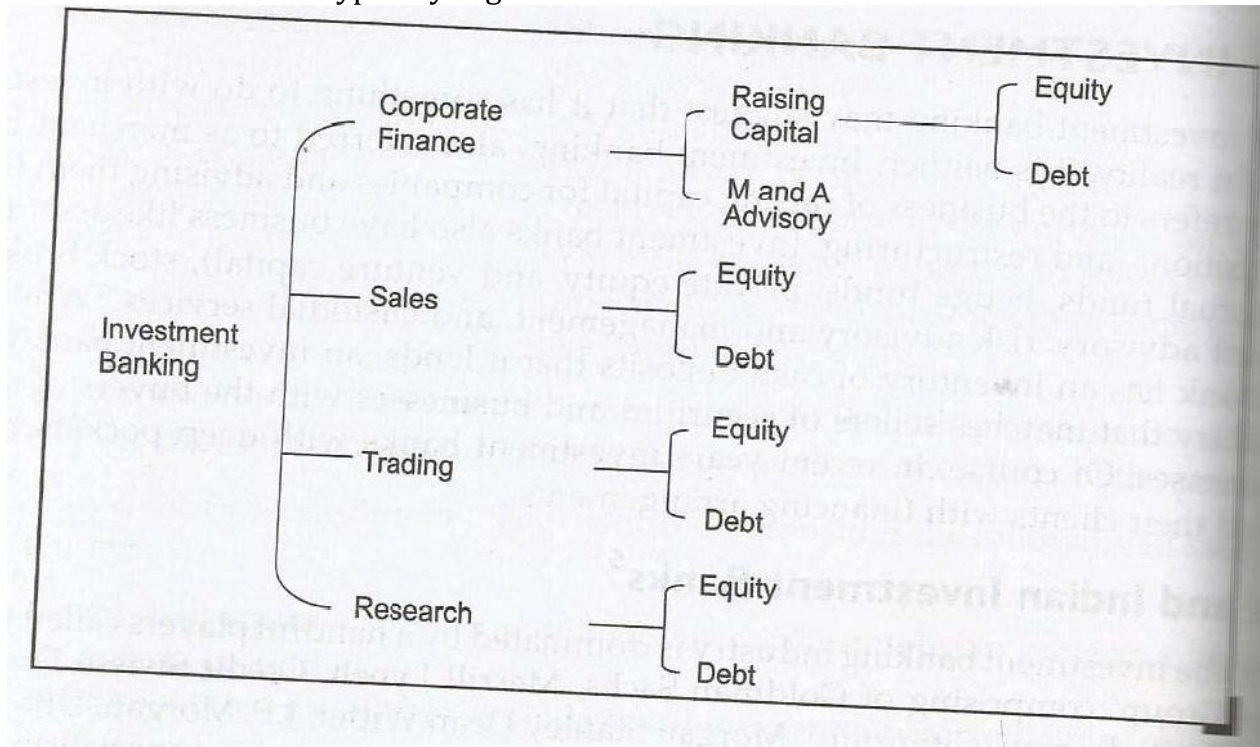
						163686476.38
		Exp. NPV	5113.34		St. Dev.	12794.00

The project has an Expected NPV of ₹ 5,113.34, with a standard deviation of ₹ 12,794.



5. ORGANISATION OF AN INVESTMENT BANK

An investment bank is typically organised as follows:



As shown above, the major activities of an investment bank are corporate finance, sales, trading, and research. The nature of these activities is briefly described below.

Corporate Finance: Corporate finance represents the bread-and-butter activity of a traditional investing bank. It covers two broad functions viz., capital raising and M & A advisory.

Capital Raising Investment banks manage the process of raising capital for their clients by selling equities, bonds, and hybrid securities to investors.

M & A Advisory Investment banks assist their clients in identifying acquisition candidates, negotiating the transaction, finalising the purchase price, structuring the deal, and ensuring a smooth completion of the transaction.

Corporate finance bankers prepare offering pitch books for the transaction (such as an IPO or a sale of a company) they propose to company's top management. The pitch

book covers topics like valuation, comparable company analysis, industry analysis, and the investment bank's customised selling points. Building spreadsheet model, creating "comps" (or comparable company analysis), and editing pitch books consumes most of the time for analysts in corporate finance.

Sales: Sales is another core area for an investment bank. A sales person may be a retail broker, or an institutional salesperson, or a private client service representative. Retail brokers build relationships with individual investors and sell securities and advice to them. Institutional salespersons develop business relationships with institutional investors such as mutual funds, insurance companies, banks, pension funds, and corporate. Private clients' service representatives provide brokerage and money management services to high net worth individuals.

The key qualities required to succeed as a sales person are good communication skills, outgoing personality, and suave manners.

Trading: Trading is also a key area for an investment bank. Traders facilitate the buying and selling of securities. They do it by carrying an inventory of securities for sale or by executing trades for clients.

Traders provide liquidity to the clients of the firm by acting as market makers. This means that they are ready to buy and sell with a price differential called the bid-ask spread. Apart from providing liquidity and executing trades for the firm's clients, the traders may also engage in proprietary trading on behalf of the firm. Generally, the same trader performs the market-making function, and the proprietary trading functions for any given security.

To succeed as a trader, one must be tough, mentally sharp, and have the ability to handle stress. Note that sometimes traders call salespeople as smooth talkers without substance while the latter refer to traders as quant jocks with no personality.

Research: Research is an integral part of an investment bank. Research analysts follow different securities (equities and bonds) and recommend whether to buy, sell, or hold those securities. They also forecast the future earnings of companies.

Corporate finance bankers depend on research reports to deepen their understanding of the industry in which they are working. Sales people use research reports to convince clients to buy or sell securities. Traders use research inputs for their trades. Indeed, reputed research analysts can generate substantial corporate finance business and stimulate sales and trading activities for the investment bank.

Research analysts may have a tough job in balancing the divergent expectations of corporate finance bankers, salespeople, investors, and companies. Corporate finance bankers expect research analysts to be banker- friendly. Salespeople press for new stock and bond idea to help them solicit trades from clients. Investors demand unbiased research reports. Finally, companies expect to get the best possible rating recommendations.

Why investment-banking firms build a Chinese wall separating corporate finance from research? Corporate finance bankers often are privy to material nonpublic information about a company because of an ongoing public issue or potential acquisition. Research analysts are not supposed to draw on that information because doing so would in effect enable their clients to benefit from inside information at the expense of existing shareholders. A similar Chinese wall separates research analysts from salespeople and traders. Why? Analyst reports may move stock prices. Thus, a salesperson or a trader who has access to research information, before it is publicly available, can give clients an unfair advantage over other investors.

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6. THE INDIAN CORPORATE BOND MARKET

Reflections on the Indian Bond Market

1. India's corporate bond market was traditionally very small. In recent years there has been some pick up. However, even now it is just about a fifth of India's GDP and hardly registers on the global radar.
2. Structurally, the debt market in India is sharply skewed towards government securities (G- secs). As far as corporate bond market is concerned, it is dominated by top- rated financial and public sector issuances.
3. In recent years, the domestic corporate bond market has done fairly well, fuelled by higher demand because a larger share of financial savings is getting channelised into the capital market. Supply conditions too have become favourable because of mounting pressure of non- performing assets (NPAs) at banks.
4. The corporate bond market will have to play a pivotal role as source of finance for India to achieve healthy economic growth over the long term, which is an absolute social necessity.
5. The following factors seem to augur well for the corporate bond market in India: the Insolvency and Bankruptcy Code (IBC), the RBI's large borrower framework for enhancing credit supply, the Security and Exchange Board of India's market's push for large borrowers, more diverse issuers, and increasing acceptability of innovation of bond instruments.
6. On the supply side the corporate bond market will be driven by large infrastructure investment requirements, growth of non- banking financial institutions, regulatory push, and the inability of banks to crank up corporate lending due to capital constraints.
7. On the demand side, the corporate bond market will be driven by higher penetration of mutual funds (MFs) and insurance products, increasing retirement subscriptions, growth in corporate investments, and increasing wealth of high-net-worth individuals.
8. The demand is likely to be somewhat less than the supply, Hence, a slew of measures is required to bridge this gap to ensure healthy demand and supply dynamics.
9. The principal investors in the Indian corporate bond market are institutional investors mutual funds, insurance companies, retirement funds Employee's Provident Fund Organisation (EPFO), exempted trusts, National Pension System (NPS), banks, FPIs, corporates, HNIs, and alternative investment funds (AIFs). Institutional investors are driven by their investment objectives, end- investor mandates, and regulatory restrictions.
10. While the corporate bond market in India has grown substantially in the last few years, it continues to be dominated by AAA and AA category issuers, while A category bonds have a measly share in the pie, because of the lack of depth in the corporate bond market.

In a report put out in 2018, CRISIL observed that there are about 2400 companies in A category with aggregate rated long- term bank facilities of nearly Rs 10 lakh crore. According to CRISIL A category bonds can yield better risk- adjusted (or excess returns offered by a portfolio over the yield required to cover expected and unexpected losses, including default risk). A category bonds have been drawing greater interest from mutual funds, but there still remains a huge untapped market.

11. After a prolonged hiatus, the Indian securitisation market gained traction in 2016. There has been a sea- change in the composition of assets being securitised in India. Traditionally, the demand for securitisation was driven by banks seeking to fulfill their priority sector lending (PSL) mandate. In recent years non- PSL asset securitisation has picked up.
12. Private placements dominate corporate bond issuances, thanks to the ease of issuance. Public issuance is not preferred because of higher cost of transaction, complex regulation, and time- consuming procedures.
13. Lower- rated bonds have found takers since fiscal 2016 because of growing interest from credit opportunities funds of MFs, real estate investment trusts (REITs), infrastructure investment trusts (InvITs), and alternative investment funds (AIFs).

Linkages between Debt and Equity Markets

Till recently, most equity investors in India paid meagre attention to local debt markets as it was quite underdeveloped and dominated by government securities. Corporate borrowings were largely in the form of bank loans or overseas borrowing. Retail investors hardly participated in corporate bond issues.

From early 2010s, things have started changing. Thanks to increasing financialisation of savings, investment in debt, directly and indirectly through mutual funds and insurance companies, has grown considerably. Foreign Portfolio Investors have also become significant.

Due to this enhanced interest, companies, largely the Non- Banking Financial Companies (NBFCs), have raised huge sums from retail investors, with issue sizes often running to thousands of crores. As Akash Prakash notes “There is a sea change in our debt markets, in terms of size, liquidity, and sophistication. These markets will get deeper and bigger, as domestic investors continue to shun real estate and gold, in favour of equities and debt for their own asset allocation.”

With the expansion of the debt markets, the linkages between debt and equity markets have acquired significant as is evident from the following:

- When there a minor crisis in the NBFC sector due to the IL & FS default, institutional investors froze their exposure to NBFC debt paper. The debt market risk aversion towards NBFCs diminished their growth and profitability prospects. This led to compression of their equity multiples.

- In the case of Essel group, the promoter and group holding company resorted to significant leverage by pledging their shares. The equity prices of the underlying shares fell sharply because of leverage concerns. Zee stock fell by 35 percent despite the company performing well. A similar thing happened to ADAG (Anil Ambani Group).

The increasing scale and sophistication of the debt markets are good things. A well-functioning debt market fragments credit risk which makes the financial system stronger. Decentralisation of credit decisions diminishes the scope for directed lending, which has historically been the bane of the Indian financial system. As this gathers momentum, equity investors will have to develop a better understanding of the debt markets perspective on the companies they are studying.



7. FINANCIAL INNOVATIONS

From the early 1970s there has been an explosive growth in financial innovations. Here is a partial list of important novelties:

• Eurodollar accounts	• Forward rate agreements
• Zero coupon bonds	• Commodity bonds
• Negotiable certificates of Deposits	• Puttable and callable bonds
• NOW accounts	• Indexed linked gilts
• Variable life insurance	• Interest rate swaps
• Money market mutual funds	• Currency swaps
• Index funds	• Shelf registration process
• Options	• Electronic funds transfer system
• Financial futures	• Screen based trading
• Options on futures	• Leveraged buyouts
• Options on indexes	

This note explores various aspects of financial innovations. It is divided into four sections:

- ☐ What and why of financial
- ☐ innovations Type of financial
- ☐ innovations Financial innovations in
- ☐ India Excesses

What and Why of Financial Innovations

Miller, Silber, and Van Horne characterise and analyse financial innovations somewhat differently. Miller describes financial innovations as unanticipated improvements in the array of financial products and instruments that are stimulated by unexpected tax or regulatory impulses. He cites the following examples¹.

- The Eurobond market emerged in response to a 30 percent withholding tax imposed by the US Government on interest payments on bonds sold in the US to overseas investors.
- Zero coupon bonds were offered to exploit a mistake of the Internal Revenue Service in the US which permitted deduction of the same amount each year for tax purposes. (Put differently, the Internal Revenue Service employed simple interest, not compound interest.)
- Financial futures came into being when the Bretton Woods system of fixed exchange rates was abandoned in the early 1970s.
- Paper currency, in a sense the most fundamental financial instrument, was invented when the British Government prohibited the minting of coins by the colonial North America.
- The Eurodollar market developed in response to Regulation Q in the US that imposed a ceiling on the interest rate payable on time deposits with commercial banks.

- Financial swaps emerged initially in response to a restriction imposed by the British Government on dollar financing by British firms and sterling financing by non-British firms.

Since taxes and regulation have triggered a number of major financial innovations, Miller likens them to the grains of sand that irritate the oyster to produce the pearls of financial innovation. Silber² looks at financial innovations differently from Miller. He considers innovative financial instruments and processes as devices used by companies to reduce the financial constraints faced by them. Firms, he argues, maximise utility under certain constraints, some dictated by governmental regulation, some defined by the marketplace, and some self-imposed. Financial innovations seek to reduce the cost of complying with these constraints. Here are two examples.

- A lot of effort has gone into the designing of capital notes, which are essentially debt instruments but are treated as 'capital' for the purposes of bank regulation.
- Highly volatile interest rates enhanced the cost of following a policy of investing in fixed dividend rate preferred stock. This stimulated the development of various forms of adjustable-rate preferred stock.

Silber's constraint-induced model of innovation explains well a large proportion of commercial bank products. Yet it offers only a partial view of financial innovation as its focus is almost wholly on the issuers of securities, not the investors in securities.

Van Horne³ views a new financial instrument or process as innovative if it makes the financial markets more efficient and/or complete. A financial innovation makes the market more efficient if it reduces transaction costs or lowers differential taxes or diminishes 'deadweight' losses. A financial innovation makes the market more complete if its after-tax market is one where every contingency in the world is matched by a distinct marketable security. The sheer number of securities required to span every possible contingency suggests that the market is bound to be incomplete in some way or the other. In such a market, there are unfulfilled investor needs. Hence, there is scope for designing securities to satisfy investor desires with respect to maturity, interest rate, protection, cash flow characteristics, put feature, or some other attribute.

According to Van Horne the following factors prompt financial innovation: volatile inflation and interest rates, regulatory changes, tax changes, technological advances, the level of economic activity, and academic work on market efficiency and inefficiency.

Collectively, the Miller, Silber, and Van Horne papers suggest that the following factors drive financial innovations:

¹ M.H. Miller, "Financial Innovation: The Last Twenty Years and the Next", *Journal of Financial and Quantitative Analysis*, December 1986.

² W.L. Silber, "The Process of Financial Innovation", *American Economic Review*, May 1983, pp.89-95.

³ J.C. Van Horne, "Of Financial Innovations and Excesses", *Journal of Finance*, July 1985, pp.624-631.

- Tax asymmetry
- Regulatory or legislative changes
- Volatility of financial prices
- Transaction costs
- Agency costs
- Opportunities to reduce some form of risk or reallocate risk
- Opportunities to increase an asset's liquidity
- Academic work
- Accounting benefit
- Technological advances
- Level of economic activity

Types of Financial Innovations

Financial innovations may be divided into the following categories:

<i>Category</i>	<i>Example</i>
A. Consumer-type instruments	☐ Variable life insurance policy • Money market mutual fund
B. Securities	☐ Zero coupon bond • Indexed — linked gilts
C. Derivative securities	☐ Options • Futures
D. Process	☐ Shelf registration process • Screen — based trading
E. Creative solutions to a financial financing problem buyout	☐ Project ☐ Leveraged

Since categories *A*, *B* and *C* represent financial products, we may broadly define a financial innovation as a new product or a new process or a creative solution to a financial problem.

Financial Innovations in India

Till the mid — 1980s, the Indian financial system did not see much innovation. In the last two decades, financial innovation in India has picked up and it is expected to grow in the years to come, as a more liberalised environment affords greater scope for financial innovation.

The important financial innovations that have taken place in India are listed below along with the principal factor which motivated it or fuelled its growth.

Innovation

- Debt-oriented schemes of mutual funds
- ☐ Partially convertible debentures and fully convertible debentures

Principal Motivating Factor

- ☒ Tax benefit
- ☐ Pricing and interest rate regulation obtaining under the Capital Issues Control Act



- Deep discount/Zero coupon bonds
- Puttable and callable bonds
- Stock index futures
- Badla transactions
- Ready forwards
- Havala transactions
- Interest rate caps/floors/collars
- Interest rate swaps
- Currency swaps
- Forward rate agreements
- Automated teller machines
- Screen-based trading
- Floating rate bonds
- Electronic funds transfer
- Money market mutual funds
- Specialised mutual funds
- Exchange-traded options
- Project finance
- Tax benefit
- Perceived volatility of interest rates
- Volatility of equity prices
- Restriction on forward trading
- Restrictions under the portfolio management scheme
- RBI restrictions
- Volatility of interest rates
- Volatility of interest rates
- Volatility of foreign exchange rates
- Volatility of interest rates
- Technology
- Technology
- Volatility of interest rates
- Technology
- Volatility of interest rates
- Investor preferences
- Volatility of stock prices
- Risk sharing

Excesses

The frenetic pace of financial innovations, particularly in the US, has been viewed by some with skepticism. Michael Keenan has articulated this concern very well.

“There have been literally thousands of new instruments created in recent years from the basic spectrum of stocks-bonds-insurance features—options-futures-indexes. No one knows how many instruments are traded; No one agency has supervisory control of all these instruments. “Hardly anyone knows the risk- return characteristics of many of these instruments.

An allied view has been voiced by Van Horne.

“Understandably the promoter wishes to make a profit regardless of whether an idea has substance.” However, it is disturbing that many instruments have hardly any value and do disservice to their users.

In essence, Keenan and Van Horne suggest that the enthusiasm for financial innovation seems to have resulted in excesses. Are these excess in the nature of bubbles or balloons? Van Horne thinks that they are in the nature of balloons. This is what he says: “A balloon might be a better metaphor for certain financial promotions. It is blown up to be sure, but not to the extent it pops. The eventual deflation is less abrupt”.

Clearly there can be excesses which tend to be costly. The costs may be in the nature of out- of-pocket expenses paid to promoters and investment bankers. More important, they are in the nature of misallocation of resources.

In an ideal world of completely rational expectations, there is no scope for financial excesses.

However, the real world is characterised by irrationality which permits such excesses to occur.

How can such excesses be checked? It is naïve to think that the promoters of new financial products will exercise self-restraint. After all, they are driven primarily by the profit motive. Policing by a regulatory body, too, is not a solution, as it is likely to stifle worthwhile innovation and breed corruption. The ultimate discipline has to come from the market-an informed market which responds sensibly to the torrent of financial innovation.

8. STARTUPS: INVESTMENT ANALYSIS, FINANCING, AND REFLECTIONS

A startup is defined as a newly emerged fast-growing business that aims to meet a marketplace need by developing a viable business model around an innovative product, service, process, or platform (*Startup Manual* Spring Board 2017).

Startups contribute to nation building in many ways by developing innovative technologies, attracting foreign capital, providing employment, offering competitive products and services, creating wealth, and promoting equitable distribution.

Recognising the importance of startups both the central and the state governments in India are actively promoting the startup ecosystem by fostering entrepreneurial activity, building capacity through infrastructure creation and training, implementing business friendly policies, providing funding support, and offering tax incentives. India is emerging as an important global startup destination. As of July 20 21, the Indian startup space had 53,435 companies recognised by the Department of Promotion of Industry and Internal Trade (DPIIT) Government of India. In the first half of 2021, Indian startups raised Rs. 79,218 crores in 614 funding rounds. India has the third largest unicorn community in the world.

Times are changing. India's entrepreneurial journey has just begun to unfurl. Starting up has become a whole lot more diverse and inclusive. This was reflected in the pitches made in the reality show Shark Tank India. Anupam Mittal, the founder of Shaadi.com, believes that Shark Tank India has been a catalyst in stimulating entrepreneurship.

Notwithstanding these positive developments it is disconcerting that many startups are being shut down every year. More than 90% of startups fail within the first five years of birth. Among the major causes of startup failures are insufficient funding, lack of innovation, and lack of skilled workforce.

This paper discusses investment analysis and financing of startups. It is divided into two sections:

- . Investment analysis of a startup
- . Financing of a startup
- . Reflections on startups

INVESTMENT ANALYSIS OF A START UP

According to Amar Bhide, for evaluating the the risk and reward of a new venture (startup), two schematic pictures are very informative.

The first picture (Exhibit 1) shows the amount of money needed to launch the venture, the cash burn in the initial years, the time to positive cash flow, and the potential reward over time.

The second picture (Exhibit 2), a complement to the first, shows the probability distribution of the rate of return.

Exhibit 1. Time and Cash Flow

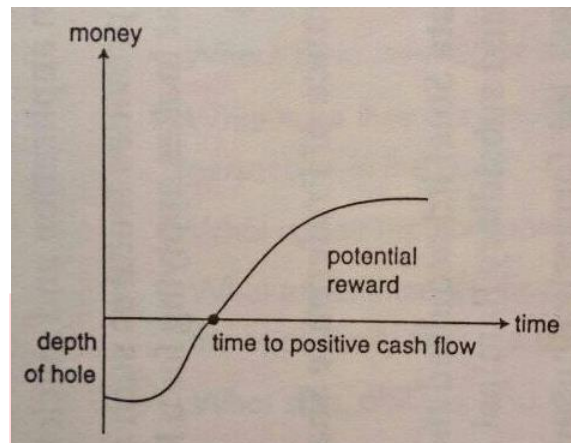
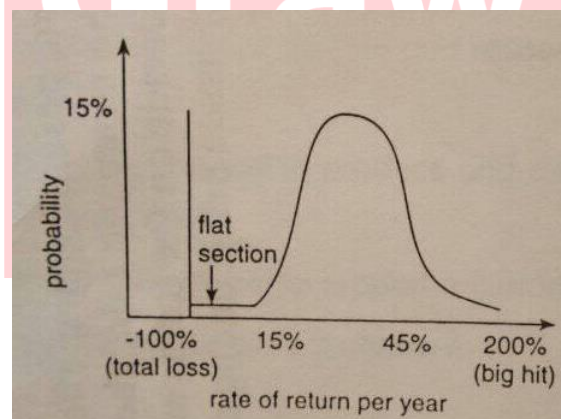


Exhibit 2. Probability Distribution of Rate of Return



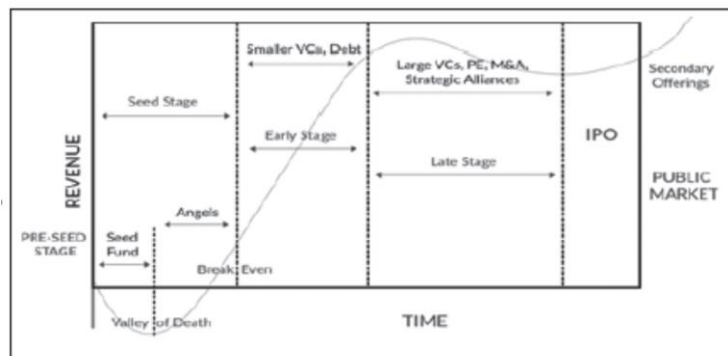
FINANCING OF A START UP

Currently institutional and non-institutional investors provide capital to Indian startups. According to startup India policy, depending on the stage of startup, investors are classified as angel investors, early stage investors, and late stage investors. An angel investor is high net worth individual who provides capital to the startup in its infancy stage. Early stage investors are the institutional investors who participate in the early growth stage when a product or service is ready and has been validated. Late stage

investors are venture capitalists (VCs) or private equity firms that invest in the startup after a revenue stream has begun and the firm has gained some market traction.

Exhibit 3 shows the typical startup financing life cycle.

Exhibit 3 Typical Startup Financing Life Cycle



From the above exhibit, it is clear that equity financing is the most common form of financing of Indian startups. Most of the banks in India, private sector banks as well as public sector banks, have been providing finance to startups through their VC arm primary relief by way of equity.

IPR-Based Debt Financing to Startups

United Nations World Intellectual Property Organisation (WIPO) defines intellectual property (IP) as “creations of the mind and covers inventions; literary and artistic works; and symbols, names, and images used in commercial activities.” Thus IP is similar to any other proprietary rights, where creators/ owners of patents , trademark or copyrighted work benefit from such works .

IP may be divided into two major categories: industrial property and copyright. Industrial property includes patents, trademarks, industrial designs, and geographical indications. Copyright is associated with literary works, films, music, artistic work, and architectural design.

IP assets play an important role in most startups. A significant number of Indian startups own at least one IP asset. India presently occupies the fifth position in trademark registration, sixth in patent registration, and 11th in industrial design registration.

Startups possessing registered IPRs can utilise their IPRs (intangible assets) as collateral for debt financing. The use of IPRs and other intangible assets as security for debt financing is an old idea, though not very popular. For example, in the 1880s Thomas Edison used his patent on the light bulb as security to borrow money to start the General Electric Company. IPR-based debt financing is more common in countries like the USA the UK Japan and a few European countries.

In India, however, IPR based financing by startups is not common for the following reasons:

- Valuation of IPR is difficult, costly, and unreliable. The exaggerated valuation of Kingfisher brand as collateral for bank lending is a conspicuous example of this phenomenon.
- There is no well-established liquid secondary market for a meaningful price discovery.
- Embedded in the business, IPRs cannot be separated.
- Lenders find it difficult to separate good IPRs from bad IPRs.
- The unwillingness of banks to provide debt finance to startups has compelled startups interested in raising debt finance to look for alternative avenues of debt finance. One avenue open to them is venture debt financing. Alteria Capital is a prominent player providing venture debt for startups in India. More and more VCs are providing debt funds to startups. Sectors such as fintech, e-commerce, transport tech, health tech, and consumer services are receiving debt funding.
- Apart from debt financing provided by VC firms there is scope for raising debt financing from banks and other sources. Some positive developments in recent years which augur well for IPR-based financing in India are as follows:
- India's first IPR policy announced in May 2016 has proposed securitization of innovation rights, allowing them to be used as collateral to raise funds for their commercial development.
- The IPR policy aims at promoting a holistic and conducive ecosystem for developing knowledge capital for India's economic growth and socio- cultural development. The Indian IPR policy is compliant with World Trade Organisation agreement on TRIPS (Trade- Related Aspects of IPRs).
- The startup India initiative is conducive for developing IPR - based firms by improving their access to finance.
- The Indian banking system has already made provisions for accepting intangibles as collaterals. For example, section 2 (1)(t) of the The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act 2002 (SARFAESI) defines the expression property and specifically includes intangible assets being knowhow, trademark, copyright, licence or franchise.
- The Federation of Indian Chambers of Commerce and Industry in association with the Ministry of Micro Small and Medium Enterprises (MSME) set up the Intellectual Property Rights Facilitation Centre (IPFC) to promote awareness and adoption of IPR amongst small entrepreneurs and startups.

(The part is adapted from Bibekananda Panda and Sara Joy “Intellectual Property Rights-based Debt Financing to Start-ups: Need for Changing Role of Indian Banks,” September 2021, *Vikalpa*.)

REFLECTIONS ON START-UPS

The Good of Start-ups: The entrepreneurial bug has bitten the younger generation. Millennials now harbor the dream of owning a unicorn. As Robin Banerjee says, “The world is experiencing a new renaissance. The pandemic, which resulted in the closure of

numerous businesses, may have forced people to find new ways to survive. It eventually opened new vistas of entrepreneurship.”

In 2021, the Indian government recognized over 14,000 new start-ups, as against only 700 just five years back. In 2021, the start-ups in India raised USD 24 billion, a two-fold increase over pre-COVID levels. More important, compared to 2020, there was a 3-fold increase in the number of high-value transactions (deals valued over \$100 million). Further, 44 start-ups turned unicorns in 2021.

The Bad of Start-ups: The bad news is that most start-ups fail. Empirical evidence suggests that nearly 9 out of 10 start-ups fail within 3 to 5 years of their commencement. Why? There are several possible reasons: small market, heightened competition, dearth of skills, inadequate finance, poor marketing, and so on. The two most important reasons are founder incompetence and inadequate availability of finance.

The Ugly of Start-ups: Start-ups rely mostly on other people’s money (friends, relatives angel investors, VCs and PEs) taken in good faith. When founders burn cash recklessly, short-change customers and employees, steal money and resort to ethical malpractices, they destroy the trust of the investor community. The ugly faces loom large in public memory.

As Robin Banerjee says, “Start-ups are the darling of the new economy, the investor community”.

9. PE/VC SCENE IN INDIA

Pivotal Decade 2011 – 2020 was a pivotal decade for the Indian PE/VC industry. During this period, the Indian PE/VC industry came of age and became mainstream. From a base of US \$8.4 billion in 2010, the PE/VC industry grew to \$47.6 billion in 2020, despite a sharp downturn in sentiment due to the COVID-19 pandemic, registering a CAGR of 19% over this period. The cumulative value of PE/VC investments between 2011 – 2020 was US \$ 232.2 billion. Indeed, PE has become a major source of capital in recent years. The decade also witnessed many structural shifts in the Indian PE/VC industry with respect to changes in the investor mix, sectors, deal type, deal size, and so on. India ranked among the top three most attractive emerging market destinations for global PE/VC players. Sectors like E-commerce, edtech, technology, healthcare, and pharmaceuticals gained prominence and are expected to be attract greater investments in the coming decade.

Exit Environment In the wake of the global financing crisis (GFC) exit was a big pain point for the Indian PE/VC industry. Post -2015, however, there was a significant pick up in exit activity. Earlier, the exit environment was marred by issues of corporate governance, contract enforcement, and inadequate vibrancy in the ecosystem for secondary and strategic deals. The latter half of the decade, however, saw the entry of a new class of investors such as sovereign wealth funds, pension funds, specialised secondary funds, global buyout funds, and strategic investors. This brought new pools of capital and provided exit opportunities for early investors. Multi- billion dollar exits like the Flipkart- Walmart strategic exit and SBI Cards IPO by Carlyle have buoyed investor confidence.

In the coming decade, large corporates interested in acquiring start- ups to augment their e-commerce and technological capabilities are expected to be a major driver for PE/VC exits. Reliance Group's acquisition of Net meds in 2020 and Tata Group's acquisition of Big Basket in 2021 are emblematic of this emerging trend.

Returns for Private Equity in India Exits by PE/VC funds grew at a rapid clip from \$3.4 billion to \$11.5 billion in 2019. What kinds of returns have been earned by Indian PE/ VC funds after their investee companies completed an IPO during this period? According to an analysis done by EY, PE/ VC funds earned a weighted IRR of 38% during this period. (Weighted IRR was calculated by multiplying the individual IRRs by the initial investments and averaging them). Thus, PE/ VC funds generated very high returns when their portfolio companies went public.

What was the contribution of "Growth" (PE funds picking up high- growth companies in their initial years) and "Alpha" (PE funds acquiring their stake at low valuation multiples in the private companies and then liquidating them at high valuation multiples in the public market) to high returns? According to an analysis done by Navin Vohra of EY India "Growth" accounted for 31.3% and "Alpha" just 5.1% per year of IRR (Total IRR = $[(1 + \text{growth } \%) * (+ \text{alpha}\%)] - 1$