Harnessing venture capitalists for delivering public resources into drug innovation

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1 The Indian pharmaceutical industry

India's pharma industry has grown substantially over the past few decades and is now a $18 billion industry with a turnover in excess of Rs.1,000 crore in 2008-09. The strengths of the industry lies in manufacturing generic pharmaceuticals at reasonable prices, for mass consumption for both domestic and export consumption. In 2010-11 sales are expected to grow rapidly with 12 companies receiving US FDA approval to export drugs. Consequently, exports of the industry will also grow.

Research and development (R&D) in the pharmaceutical industry has witnessed no success yet in creating a new drug despite its efforts for the past sixteen years. While the pharmaceutical industry in India is efficient on a global scale for production of drugs, several studies on the economics of innovation have brought out that growth performance and competitive advantage of countries go together with their activities in innovation.[1] A rich ecosystem for innovation and drug discovery is indispensible for the pharmaceutical industry.

In order to build a deep, rich ecosystem for innovation and drug discovery in India, policy action from the Government could focus on multiple points on the pharmaceutical ecosystem. Funding universities, stronger intellectual property rights protection, protection and exploitation of traditional knowledge are all avenues that call for policy action. Likewise, financing drug discovery is also an important avenue for policy support.

[1] Kortum, Samuel and Josh Lerner, *Assessing the Contribution of Venture Capital to Innovation*, 31 (4), The RAND Journal of Economics, (Winter, 2000), pp. 674-692

2 Goal

The Department of Pharmaceuticals intends to provide capital support, where absent, for drug design, discovery and development through the establishment of a dedicated facility.

3 Harnessing venture capitalists

Investing in a fledgling start-up firm aiming for research and development in the pharmaceutical industry is extremely risky because of the high rate of failure among new firms. Established firms prefer a strategy hinged on steady returns as opposed to the high-risk R&D path to high returns. This "liability of newness" (both a new firm and the new uncertain idea) is the very foundation of the venture capital industry.

Venture capitalists (VC) have the expertise in handling all aspects of a high risk undertaking; They raise funds for such investment and are often professionals with specific industry experience. In return for investing, the venture capitalists take a large or complete equity stake in the firm in order to actively assist and increase the chances of survival and growth of the new firm. They also provide assitance of other kinds that are important for the success of a new venture: key personnel, strategic advice, financial management, and most importantly establish key governance parameters for constant monitoring and evaluation.

VC backed companies significantly out perform other companies in terms of their ability to create wealth and generate the spillover benefits (e.g. increased productivity, gross value added, skills) that are the objective of innovation policy. Further, VC backed companies exhibit higher governance characteristics and VC funds are more efficient in delivering funds to meritorious targets. Investments are generally made independent of investor choices into young companies that have been selected by thorough verification and enquiry.

Hence, the VC provides more than just financial support; the VC provides every assitance required to make a venture successful. By virtue of greater domain knowledge and thorough analysis of companies that receive such funding, firms identified by VCs are worthy of capital support. Appendix A explains the legal structure and workings of the VC industry in India.

Given that the Department of Pharmaceuticals intends to provide capital support for high risk venture such as drug design, discovery and development, it is natural to attempt at harnessing the venture capital industry to meet its objectives.

The reasons that the Department of Pharmaceuticals should harness VCs are as follows:

- The type of pharmaceutical companies that VCs invest in are the type of companies that the Department of Pharmaceuticals should encourage and support (i.e. new companies with promise but without adequate access to finance).

- The skills, in terms of the ability to search promising pharmaceutical companies and providing management expertise, that VCs provide is not available with any other financial provider and with the Government.

4 Addressing public policy concerns

Any scheme attempting to incentivise innovation must ensure that large bureaucratic systems should not come in the way of the scheme from fulfiling its mandate. While it is important to harness VCs in delivering public resources for drug design, discovery and development, public policy objectives for a clean mechanism of delivery also needs to be addressed.

Therefore, a design that harnesses VCs must also be an arms length facility that has a single objective of providing capital support for drug design, discovery and development. The design must be least burdensome on the government machinery and away from delays and frictions in the government payment process.

The design should be process efficient. The legal contracts must be comprehensive and straightforward. The design must not impose high transaction costs and must use existing relevant financial infrastructure.

In order to find the right target for investment, a system of market test is ideally suited in this case for evaluating which entities to invest in. Therefore, at every stage of the delivery mechanism, entities must be subject to market evaluation and have passed the same before receiving public resources.

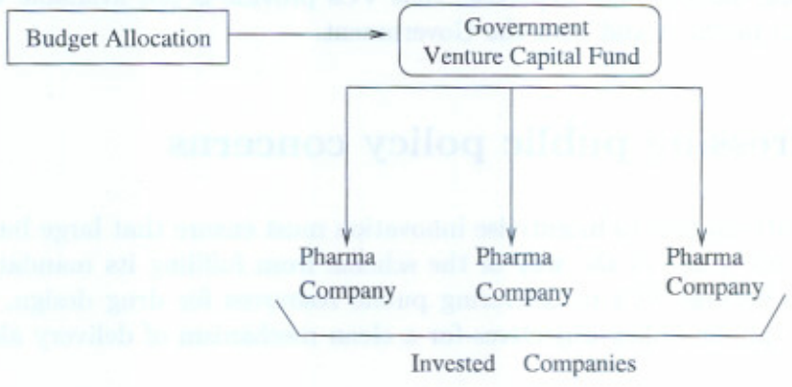
While harnessing VCs can assist the Government in fulfilling many of its governance objectives, it is important to assess various ways of locating VCs in the delivery mechanism, to select that which addresses all public policy concerns.

5 Various ways of harnessing venture capitalists

Providing risk capital to assist the development of R&D in the drug industry by harnessing venture capitalists could take place in various ways:

1. Direct investment by a government VCF
2. Government investment into specialised Private Equity (PE) or VCFs
3. Government investment into Fund of Funds (FOF)
4. Government investment in innovative R&D companies with PE/VC funding as debt

Figure 1 Direct investment by Government VCF



5.1 Direct investment by Government VCF

Figure 5.1 presents the delivery design when there is direct investment into portfolio companies by the government by setting up a government VCF. This structure enables the government to control decision making in investment choices and also the operations of invested companies. The direct seed capital investment in equity of the innovative companies does address the market gap in funding for high risk, innovative pharmaceutical companies.

However, this model does not fulfill other important public policy objectives. There is no arms-length relationship between the government and the portfolio company. Furthermore, direct ownership of equity does not harness the expertise that has already been built in the VC industry in India as government incentives will be insufficient to attract highest quality fund managers to run and operate the fund.

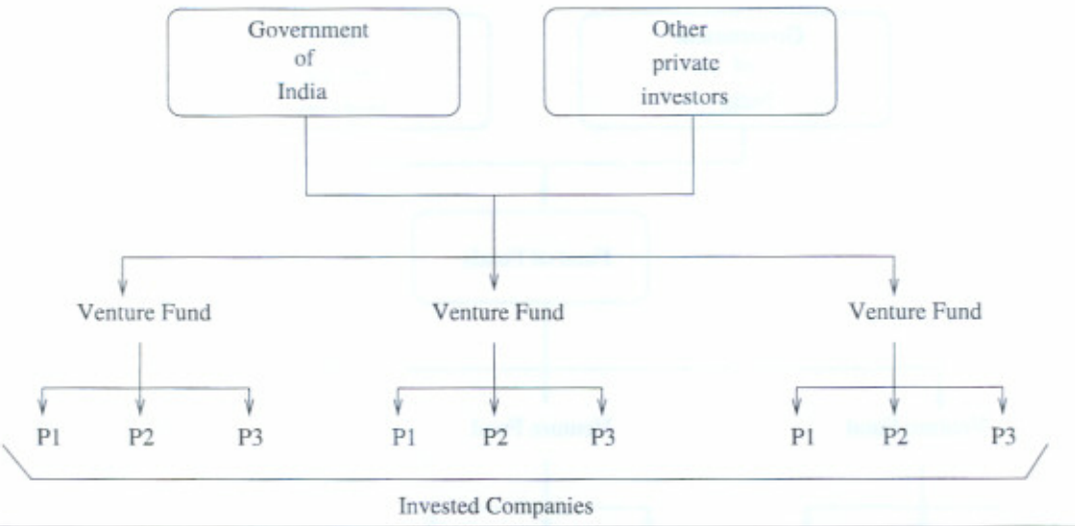
The government would also face the burden of operational decision-making, while its objective is only to incentivise and not micro-manage the operations of the portfolio company. The selection of portfolio companies to invest into does not fulfill the public policy objective of passing the market test.

5.2 Government Investment into Specialized PE/VCFs

The delivery mechanism when government investment takes place through specialised PE / VCFs (figure 5.2) fulfills all public policy concerns and harnesses the strengths of the VC industry.

This government investment happens into specialised PE/VCFs that undertake high risk

Figure 2 Investment into specialised PE/VCFs



investments into portfolio companies that are in the pharmaceutical space. This investment will be subject to a market test at the level of the PE / VCF where the fund under question would have raised a large portion of capital themselves.

The unique business model of the VC industry is such that all investors, hereafter known as limited partners or LPs, have no say in investment decisions. Investment decisions are taken by impartial, experienced, and highly motivated and trained fund managers (general partners or GPs).

Since this mechanism makes government investment complementary to private investment, subject to market test, the facility is better targeted to achieve the objective. In the long run, upon successful investment by the fund, the government can augment this facility with the returns on investment.

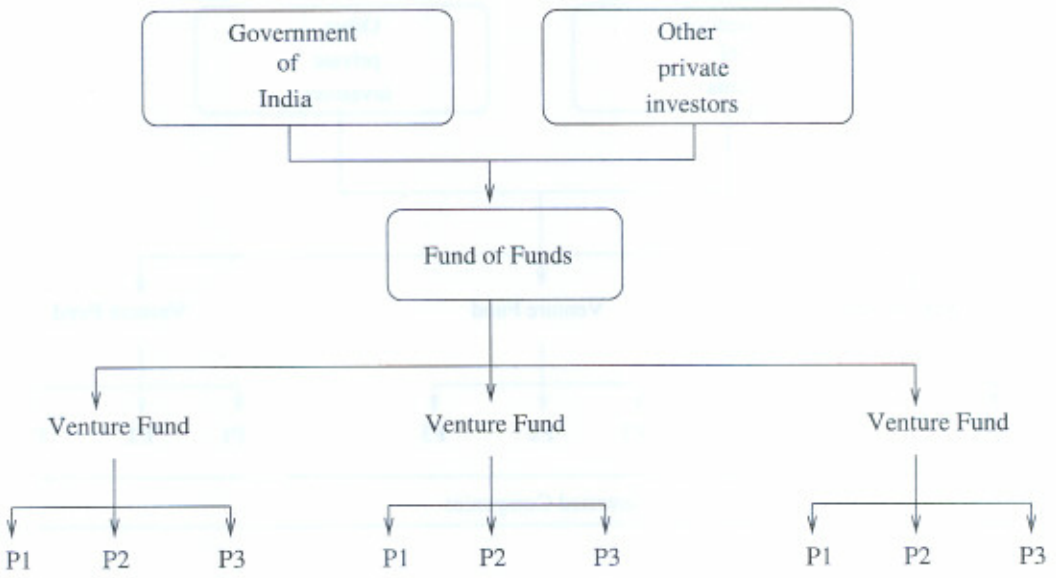
However, this design requires market presence of PE / VCFs interested in high risk investment in pharmaceutical R&D and innovation. The current market environment suggests that there will not be sufficient players to make use of the proposed facility.

Since this delivery mechanism fulfills all requirements, it is proposed that this facility should make use of the design as and when such specialised PE / VCFs are set up.

5.2.1 Government Investment into Fund of Funds (FOF)

A more sophisticated version of the design in section 5.2 is one where the government invests directly into multiple Fund of Funds (FOF)(Figure 5.2.1). Government investment into specialised PE / VCFs increase over time the operational role for the government.

Figure 3 Investment into Fund of Funds (FOF)



This structure mitigates ever increasing administrative role for the government by pooling market tests at the level of an FOF.

All benefits mentioned in section 5.2 are obtained in this design as well. However, this structure requires market presence in the pharmaceutical space not only of PE / VCFs but also of FOFs in order to obtain the desired targeting.

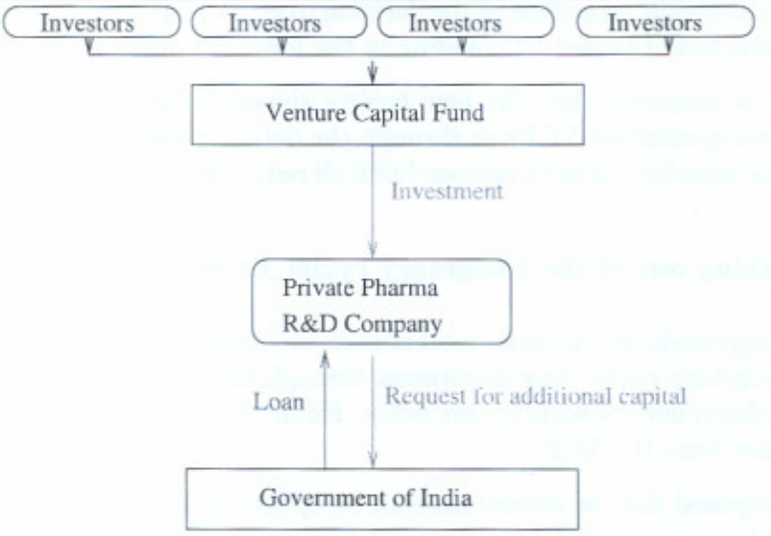
5.3 Government Loan to Innovative R&D Companies with PE/VC Funding

While all structures till now explore possibilities of channelling investments through VCFs, the mechanism in figure 5.3 uses VCFs as pointers to companies that can productively utilise government resources. These have two important characterisitics pertinent to the objective of the facility.

Firstly, innovation driven portfolio companies in the pharmaceutical space that have committments from PE/VCFs have already passed the market test by receiving PE / VC funds. Secondly, because there are no specialised VCFs for investment into the pharmaceutical industry, this design harnesses any investment from general VCFs created in India into the pharmaceutical space.

For additional capital requirements such portfolio companies may approach the Govern-

Figure 4 Investment as debt into R&D companies with PE/VC funding



Rate of interest = Cost of borrowing

ment for a zero-coupon bond at the prevailing risk free interest rate at the time of contracting for the average incubation period or until PE / VCF retain investment in the company. While the long term monetary returns to the Government will be lower in this design, the usage of this facility may be greatly enhanced given that this approach is simple and easy to execute. It is also learnt that the VC industry will not be averse to clauses in the the contract where such government investment is repaid before or as and when the VCF exits the company.

Figure 5.4.1 is an example of the detailed legal contracting requirements in this facility. This figure explains the entire process if the investment by the government is in the form of debt or a preference share.

5.4 The desired approach

The objective of this facility is to provide capital support for drug design, discovery and development through establishing a dedicated facility. The importance of harnessing the VC industry to deliver public resources is also well understood.

The role of VC in this facility is to locate a high potential company and fulfill the VC's objective. By doing so, the VC has identified high-potential companies that the government could channelise its resources into and also improve targeting the facility towards companies that could deliver in future.

Government should be agnostic about whether the money goes into an innovative company

directly or into a VCF from which the money goes into an innovation company. The public policy concerns remain regardless of the decision to go through a VCF or in parallel support a company that has obtained VC funding in the form of preference shares or debt.

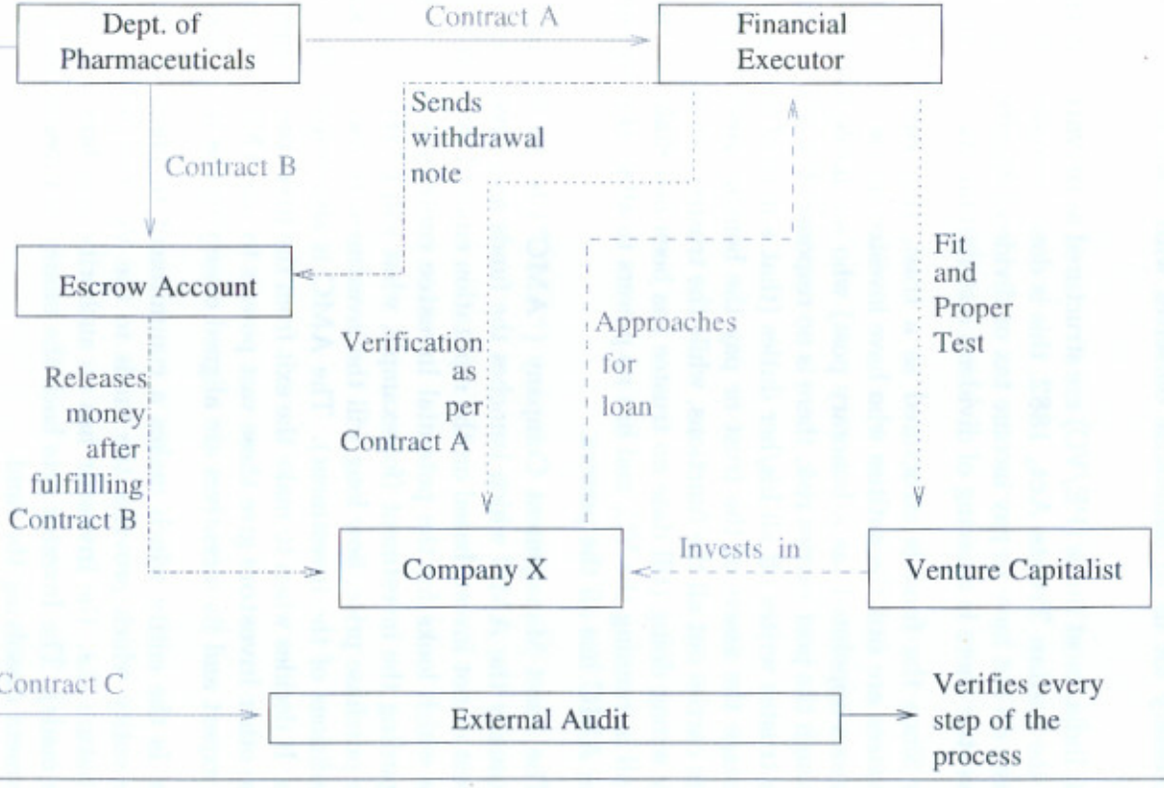
Therefore, it is proposed that the new facility should be able to deliver either through investment into specialised VCFs or through the debt / preference share route, remaining agnostic to the structure as both options fulfill all requirements to achieve stated objectives.

5.4.1 Breaking out of the budgetary cycle: Escrow account

The desired approach, in all three mechanisms we propose to activate, requires breaking out of the budgetary cycle. Any investment through the VCF requires the Government to honour draw-down notices without any delay. Failure to comply with provision will attract severe penalties from the VCF.

Hence it is proposed that an escrow account be opened with a bank to hold the budgetary allocation. The appointment of a financial executor will need to take place in order to appoint a signatory to the escrow account and the certification procedure to enable access to the facility for a VCF or a portfolio company, depending on the structure adopted on a case by case basis.

Figure 5 An example: Investment through the debt route



A The venture capital industry: structure and definitions

A.1 Important terms

It is neccessary for us to familiarize ourselves with some of the terms used in the VC industry.

Trust In India, most funds (PE/VC) are structured as **private trusts** which are governed by the **Indian Trusts Act, 1882**, this is done because unlike companies revocable trusts do not have to pay income tax or dividend distribution tax. Therefore, to the **investor** there is a saving of dividend distribution tax (15% at present).

Trustee Since the fund is structured as a trust, the trust must have some trustees. Trustees are **not** the entities who have invested in the trust. They are merely some persons appointed (as a honorary post) who are liable for the actions of the trust. Though the post carries risk, there is no responsibility of the trustee. This is becuase the trustee writes off all his/her duties (that a normal trustee has to carry out, like manage the assets of the trust or pay the beneficiaries) to the **AMC**. The **AMC** then carries out all the functions, while the trustee just takes on the responsibility of any wrong doing (till date no trustee has been held liable). The trustee has no role at all in running the VC, and has no powers to affect the decisions made by the VC. The **AMC** has all the powers.

AMC The Asset Management Company ("**AMC**") is the manager of the VC fund, it is usually the **AMC** which launches the funds and **investors** make the decision to invest or not invest, based on the reputation enjoyed by the**AMC**. The **AMC** is the one which looks for the potential **investee** companies and makes all the decisions regarding the investment (for example, what will be the amount, how much will be the purchase price, how long will the investment be for, what will be the terms and conditions of the investment). The **AMC** is also responsible for the exit decisions too. It decides when to make the exit from the **investee** company and at what price. The other **investors** give these vast powers to the **AMC** because they the **AMC** is an expert and its incentives are aligned closely to the **investors**.

Investor Is the entity which makes a commitment to invest in the VC fund. This is the entity which provides the funds to the VC, the investment is purely financial in nature (i.e. the **investor** has no authority over how and where the investments are made). The Investor gets back the money as investments pay off, with the final payment dissolving the fund.

Investee The company in which the VC chooses to invest in is the **investee** company. The **AMC**, on behalf of the VC, enters into a share purchase agreement between the VC and the **invstee** company. The VC has the right to take major decisions

of the **investee** company and also decides when and how to exit the company. The **investee** company has very few rights on financial decisions and the VC (**AMC**) can take over the **investee** company if things dont go according to plan.

Drawdown When the VC fund is created the **investors** do not deposit all the capital of the fund. Usually the **AMC** first finds a potential **investee** company and then contacts the **investors**. The **AMC** sends a **drawdown** notice to the **investors** asking the **investors** to pay a percentage of the commitment made by them when the VC was created. The **investors** are committed previously to honour the drawdown notice within 2 weeks and if they fail to pay up, all previous payments are appropriated by the VC. *This is important because, if DoP becomes an* ***investor*** *then it would have to have a mechanism to honour drawdown notices quickly, without standard delays or budget payment constraints*

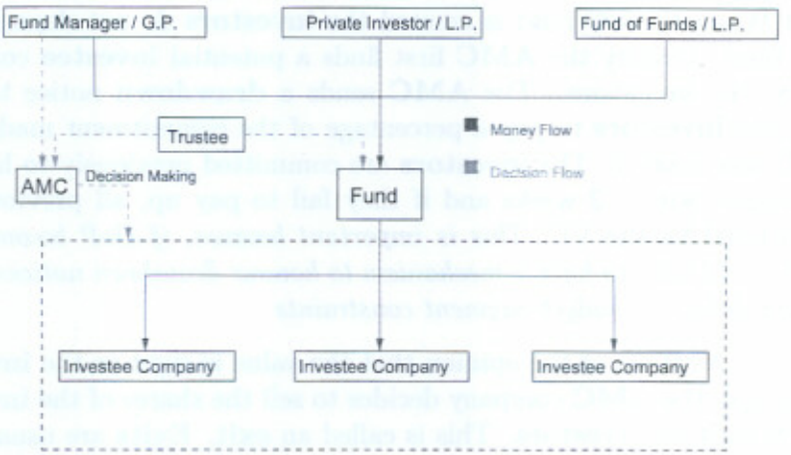
Exit When the **AMC** is of the opinion that the value is right or the **investee** company is bankrupt, the **AMC** company decides to sell the shares of the **investee** company and pay back its **investors**. This is called an **exit**. **Exits** are usually through IPO of the **investee** company or purchase of the **investee** company by another entity. The **exit** is no neccessarily the end of the VC fund as there are multiple investments made by the VF fund in different **investee** companies at different points of time. However, the last **exit** ends the VC fund as all investments are paid off or written off by then.

Payout On exit from **investee** company, the **AMC** pays back the **investors** the money made from that investment. The distribution is proportional to the contribution in the VC fund.

Fund of Funds Like any other fund, except that it invests in other funds.

A.2 Basic VC structure

The diagram below shows the structure of a VC fund and its transactions.



A.3 Timeline of investments

A sample timeline is given as below:

- The **AMC** decides to launch a fund. It goes around looking for potential **investors**.
- Once the **investors** are in place all the documents are drawn up. The **investors** make the commitment to pay, the trust is set, up the **trustees** are appointed and the **AMC** is appointed the manager of the trust.
- Now the **AMC** starts looking for potential **investee** companies.
- Once an **investee** company is found the **AMC** company sends out a **drawdown** notice to the investors asking them to make payments proportional to their commitments.
- This money is then used to buy equity (or even debt/equity composites) of the **investee** company.
- After somtime (within a predermined window) another **investee** company is found and the previous two steps are repeated.
- If one of the companies becomes succesful, the VC/ **AMC** decides that it is time to do an IPO of the company, it makes the IPO happen and sells its shares. The **investee** company may also be acquired by a bigger company.
- The **AMC** then distributes the proceeds of the IPO/ acquisition, pro rata, to the **investors**.

- If a company fails then the investment is written off.
- When the last investment is written off/ or the last payout is made the fund is closed. Most funds have a duty to do this within a fixed period of time.
- The entire process is completed within 9 to 15 years (this is a predecided value).

The diagram below is a representation of the timeline of VC transactions.