A PILOT STUDY ON TECHNOLOGY BASED START-UPS

Centre for International Trade in Technology

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Introduction

Start-ups have played and continue to play significant roles in the growth, development and industrialization of many economies the world over. Globally, technology based start-up companies are registering in higher number than non-high tech companies because of their growing importance in the new knowledge economy. Since the rate of generation and innovation in knowledge has become very fast, the rate of obsolescence of technology has also become fast and consequently, the rate of mortality of start-up companies have also gone up. Hence, it is important that appropriate strategies are framed for their long term survival. Even in the US only about half of new employer firms survive 4 years or more and bankruptcies occur for nearly 60 per cent of the high-tech start-up companies.

In India, there are practically no serious studies related to Technology based small start-ups companies though some studies are available for computer software start-ups. A study on Status and Support Needs of Technology based Start-ups was taken at CITT,IIFT with the support and funding of Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India.

The present study is a pilot study on the status of technology based Start-up companies in select areas and was undertaken to identify difficulties and constraints faced by Start-up companies in India and to suggest remedial measures. The study has recommended measures to make the sub-sector virile and vibrant in order to play a crucial role in economic and technological developments in the country.

Objective of the Study

The objective of the present study is to study the performance and status of the technology intensive start-up companies in select areas, and evolve measures to encourage and support start-up businesses. In order to meet the objective of the study, the task was divided into the following two areas:-

1. Study of the status of the technology intensive start-up companies in select areas.

2. Determination of the constraints faced by the start-up companies and suggest measures and mechanisms for encouraging start-ups and improving their survival rate.

Methodology

Since the study was the first of its kind in India, a thorough literature survey was done to find out the various issues connected and what other advanced countries have found out by such studies. The issues were then deliberated by the investigators and the suggestion of senior IIFT faculty members were incorporated in finalizing the questionnaire.

A total of about 400 Start-ups incorporated between 1991-2005 were randomly selected from all the states of India and covering virtually all forms of ownership like Sole Proprietorship, Partnership, Private and Public Limited Companies, etc and kinds like Manufacturing, Dyes and chemicals, Pharma, Electronics and Computer hardware, etc of business taking help of the data base created by Ministry of Company Affairs, Science & Technology Parks, Incubator units, Banks, Funding institutions including venture capitalist ,etc

The study data has been categorised in two types of enterprises. One constitutes the enterprises based on well established and readily available technologies which have

been termed as “Traditional Technologies” in areas like paints, pigments, chlorine based chemicals, synthetic dyes, organic chemicals, well known pharmaceutical preparations and fabrication units etc. The other enterprises involving higher level of processes or machines like bullet proof glass, precision machine tools, automated control systems, robotics, microwave systems etc. which have been termed as “Technology based ” enterprises.

Therefore, two sets of questionnaires were constructed, one set for the Start-ups with Traditional technologies and the other for the Technology based start-ups and sent to the selected participants. The responses to the questionnaires were complemented with personal interviews of the key operators by the researcher. The responses of the participants were analyzed using the excel analysis tool pack, which generated cross tables and percentages of the responses.This well designed questionnaire was then sent to 400 carefully selected Start-up companies and 115 responses were received involving 82 enterprises in traditional technologies and 33 in technology based enterprises.

Visits were also made to the incubator units in IIT Delhi, FITT and all existing incubating companies were interviewed and responses duly filled in the questionnaire were collected from the incubator units.

The data received from the responding start ups was further augmented by the information available from the web site of National Science and Technology Entrepreneurship Development Board .The information was also collected from the participating companies from trade fairs like Auto Expo 2006, Auto Enterprises 2006, Plast-India 2006 and Def Expo 2006. Apart from above sources the primary information was also collected through personal visits to 82 companies in an industrial cluster in Ankleshwar, Gujarat. This augmented information was got vetted from the start up companies, analyzed and interpreted for the study.

Scope of the Study

This study (A Pilot study on Technology based Start-ups) is limited to the following identified sectors:-

1. Defence Equipments & Accessories
2. Plastic & Machinery Parts
3. Auto Component
4. Electronics, Computer Software & Hardware
5. Dyes and Chemicals
6. Drugs and Pharmaceutical intermediates
7. Others

The criterion for the selection of the companies for the study were:-

1. The companies, which were incorporated during the period 1991-2005.
2. Only the companies registered under Companies' Act were taken for the study.
3. The companies, which are in existence (from the date of incorporation) for at least 5 years.
4. Enterprises are promoted by first time entrepreneurs.

The various parameters for the study were decided on the basis of issues and factors coming out of literature survey and in consultation with faculty of IIFT. Some of the parameters were:-Choice of a time period for the study, Choice of firms / companies, Size of the firm, Nature of loan, Background of the owner / promoter, Number of owners, Role of venture capitalists, Aim and vision of the owner, Technical change made, Business strategy and marketing, Organizational and management issues, Human capital, Wages, the constraints faced and suggestions to overcome the constraints.

Based on the data available, analysis and findings of the study, recommendations have been made. Limited data could be obtained or has been made available by the respondents as most of them have been hesitant in supplying information or responding to a well designed questionnaire or even for our visit to their respective units. It is hoped that the report would be useful to policy makers, industry, academicians and all others concerned with the subject.

Findings and Recommendations

The major findings of this study include the following:

1. Majority of traditional technology based companies are in partnerships 86.59% (71/82) whereas 13.41% (11/82) are private limited companies, while in technology based companies, majority is of Private Ltd Co. 60.61% (20/33) and partnerships 18.18% (6/33).

2. Most of the promoters in the traditional technology industries are graduates 96.34% (79/82) and only few have other professional qualifications, whereas in technology based companies, mostly are engineering graduates 63.64% (21/33) followed by diploma holders 12.12% (4/33) and other professional qualifications 9.09% (3/33).

3. The main aim of business for majority of the entrepreneurs was self employment for income.

4. As far as source of technology is concerned for traditional technology based companies, only a few have collaborated with Indian labs otherwise the technology has come from the partners themselves, while technology based companies are developing products through indigenous technology and a few of them have technical tie-up. Some of them are using open sources for fulfilling their technological needs.

5. None of traditional technology based companies had formed technological tie-ups with either university or Technological labs.

   In technology based companies, 9 Companies out of 33 (27.27%) have formal technical tie-up with R&D labs, universities or other agencies in India or abroad. in order to be both competitive locally and globally and to conform to international product standard.

6. Most of traditional technology based companies have investment in plant & machinery in the bracket of 25 lakh to1 Crore, while in technology based companies, majority of them have invested in plant & machinery in the range of Rs 1 lakh to 25 lakh.

7. The source of funding for traditional technology based companies is mainly self finance 43.44% (63/145), banks or financial institutional funding 40.69% (59/145) or private loan 13.79% (20/145) in that order, where as for technology based companies it is mainly banks or financial institutional funding 44.44% (20/45) and self finance 31.11% (14/45). Only a few have utilized other sources of funding like venture capital 8.89% (4/45), foreign investment 8.89% (4/45) and capital market 2.22% (1/45).

8. In traditional technology based companies, average expenditure on R&D against turnover usually varies from 1 to 2 % and in exceptional cases beyond 2 %, where as in technology based companies, expenditure on R&D varies from 0-2 % to upto 25 per cent of respective turnovers and a major group is spending in range of 8-10 %.

9. The workforce employed by the traditional technology based companies mainly consists of under graduate with only a few graduates, post graduates and higher degree holders.
   Technology based companies are employing large number of technical people consisting of ITI certificate holders, diploma holders and other professional qualifications.

10. Most of traditional technology based companies lack in skilled working force and are not using the modern techniques of production for improving their quality of product.

11. The profit in traditional technology based companies is steadily increasing from year 1991-95 to 2000-05.

12. Most of the traditional technology based companies have turnover in the range of Rs 25 lakhs to Rs. 1 Crore, while technology based companies have turnover in the range of Rs 1 Crore to 20 Crore.

13. Most of the traditional technology based companies have average exports upto Rs. 5 Lakhs, whereas in technology based companies, average exports for greater number of companies fall in the bracket of 25 lakh to 1 Crore ,10 to 25 lakh and 1 Crore to 20 Crore.

14. The constraints faced by Start-ups in India in decreasing order of intensity include: Government Policies 21.90% (97/443), access to finance 20.31% (90/443), Marketing 16.70% (74/443), Skilled labour 14.45% (64/443), access to modern technology 13.99% (62/443), High cost of raw materials 6.32% (28/443), Infrastructure 2.03% (9/443) and others (support system, Management issues, Inexperience, Quality management, competition, Business strategy). Thus government policies represent the greatest problem faced by start-ups in India.

    The various problems in government policies emerging from the study are:- Lengthy Procedures & formalities, extensive paper work 20.30% (108/532), High Import duty, Excise duty, Custom duty, Sales tax 19.55% (104/532), Stringent norms of Labour Laws 14.66% (78/532), Wrong interpretation of laws & policies of the govt. by the enforcement agencies 14.10% (75/532), Stringent Environment & Pollution control Norms 12.22% (65/532), Various Insurance Schemes 9.59% (51/532), Frequent Raids & Checking by Vigilance Teams 8.08% (43/532) and taxation 1.50% (532).

The various problems in access to finance include: Lengthy time taking procedure 30.15% (60/199), High Interest Rates 27.64% (55/199), Reluctance of Funding Institutions/Banks 16.08% (32/199), Collateral Security 11.06% (22/199), Lack of Information 10.55% (21/199), Non Availability of Angel & VC's 2.51% (5/199) and insufficient seed funding 2.01% (4/199).

The various problems in marketing faced by start-ups coming from the study are:- Lack of Information about new markets for expansion 67.86% (57/84) constitutes the major problem for start-ups followed by lack of access to media and publicity 15.48% (13/84) and reluctance of business community for business 13.09% (11/84).

In the study, it was found that technology constitutes 13.99% (62/443) of overall constraints faced by Start-ups. Non availability of Information 40.00% (42/105) about better and newer technologies constitutes the first major problem related to start-ups followed by non availability of required technology 27.61% (29/105), procedural problems in technology upgradation 22.86% (24/105), problems in technology acquisition 3.80% (4/105) and technology collaboration 2.86% (3/105).

Specific recommendations are made within the context of various issues:

(i) The business environment in which technology based start-ups operate should be reviewed and improved upon in terms of the regulatory and legal framework in order to encourage the growth and competitiveness of such start-ups. Adequate awareness creating mechanism needs to be strengthened.

(ii) The government should as a matter of urgency, effect appropriate reforms in the customs as well as in the ports operations to reduce the number of agencies involved and make the clearing of goods more efficient, at least for time sensitive sectors. The awareness among the custom officials and the

inspecting agencies, about the critical needs of technology based enterprises is desirable.

(iii) There is a strong need to promote appropriate support programmes that would offer training of staff of financial institutions to evaluate small borrowers quickly and monitor them in addition to training entrepreneurs to keep good financial records.

(iv) Long term loan facility should be provided to start-ups at a lower interest rate that is supportive to loan repayment and overall growth and competitiveness of the start-ups.

(v) Lack of information on the operations of banks on the part of start-ups was identified as one of the factor hindering start-ups from accessing financial support services. Thus ,it is recommended, finance institutions should from time to time organize forums for start-ups where issues surrounding access to financial facilities are discussed. Financial institutions should endeavour to act as investment participants in giving credit facilities and should see to it that their investment yield the maximum result. Bankers should assist start-ups to receive bank loans, create institutional credit consciousness in start-ups and also help them to maintain proper account. All these require effective communication network for it to succeed to the mutual benefit of all stakeholders.

(vi) Government/other agencies must attempt to make pre-venture capital relatively easily available for entrepreneurs with a certain back ground and experience. The government should stimulate the development of Venture Capital Market for Start-ups through the provision of specific tax incentives for venture capitalists, and may have dedicated staff to address the concerns of VCs and start-ups. It is recommended that government officials who have had experience with the start-up environment be involved as a point person for VCs and start-ups to direct their concerns and direct them to the proper

guidance. Coordination among various funding agencies and developmental agencies giving grants or subsidies needs to be strengthened.

(vii) Start-ups need support programmes for displaying their products in fairs and exhibitions and to train them on management, especially in relation to marketing issues such as methods of costing and pricing and techniques of promotion and sales. Marketing support required include among others the following:

- market information and research
- trade statistics
- product promotion
- information procedures and regulations for export and
- information on international exhibitions and fairs.

The government should readily and freely assist start-ups to have access to necessary information relating to business opportunities, markets and services etc which would enable them to enter in new markets and expand their operations. For this to be feasible, effective and functional, government should establish Business Information Centers (BICs) and Business Support Centers (BSCs) in partnership with States and Local Governments at every state capital and local government headquarters. The BSCs should offer advisory and mentoring services to entrepreneurs and provide them with information about new markets were they can expand their business or from where they can get their desired information by paying nominal amount of fees. The existing mechanisms may be reviewed and strengthened.

(viii) There is a need to promote effective communication mechanism between start-ups and technology producers in order to create awareness of newer technology available and transfer of technology, and easier access to them.

(ix) The existing relationship between R&D institutions and start-ups need to be strengthened, as it is very weak. There is need to promote the establishment

of start-ups coordinating units in the R&D institutions in order to facilitate assistance to these firms. Also, the creation of frameworks for joint research projects that address Sectoral needs of startups such as technology support needs and technological information infrastructure is imperative.

(x) There is a need to support technology acquisition and upgrading by start-ups through a number of recognized arrangements such as technical assistance agreement, “know-how” agreements, joint ventures and franchising. The understanding, application and use of patenting among start-ups should be encouraged and promoted.

(xi) Start-ups should be advised and guided in choosing suitable and economic technology. Such advice and guidance on both the choice of technology and the appropriate provider and the manner of implementation of agreement can be provided by private consultants or technical service providers at subsidized cost with the support of private sector organizations such as chamber of commerce and industry.

(xii) There is need to promote the creation of integrated networks of start-ups. The new role of support services is to influence start-ups to help each other and work together. This network will be aimed at increased output and upgraded technology to produce through combined efforts, products that can compete locally and internationally. This demands that policy makers should aim at creating the enabling environment to move start-ups away from relying on their own limited capability towards cooperation within groupings in order to gain greater competitive strength. It equally calls for the promotion of industrial clusters which will encourage specialization and cooperation between firms of the cluster with a view to developing collective efficiencies. The functioning of S&T Parks and TBIs etc needs to be reviewed for more effective support to technology based start-ups. High level of trust and risk taking with entrepreneurs would encourage start-ups.

Chapter 1

Introduction

Chapter 1

Introduction

1.0 Background

There is no precise or widely accepted definition of “Start Up Companies”. However, start-ups are usually those enterprises which are promoted by first timer entrepreneurs and are relatively recent in origin. The entrepreneur or a team of entrepreneurs/professionals having expertise/experience, knowledge or know-how etc. are usually the driving force behind such ventures involving a high degree of entrepreneurial skills and risk taking capacity. Such start-ups need support and encouragement from various perspectives during the initial phase and subsequently the growth phase till establishment on firm-footing. The hand-holding and support is more critical for technology based startups. There are several examples in advanced countries and also in India where successful start-ups have grown into large companies and even large trans-national corporations.

Several policy measures and mechanisms have been evolved over the years to promote and support the start-ups in various phases, more so in advanced countries where large number of new technologies are available in the publicly supported R&D and academic institutions for commercialisation and transfer to industry. The supporting mechanisms include technology business incubators and science & technology parks, innovation centres, venture capital, concessional financing and grants, fiscal incentives, etc. In India, various types of these mechanisms have been evolved and further being evolved to promote and support technology based start-

ups. However, a quick survey of literature indicates paucity of data and research studies related to the experiences and difficulties faced by start-ups, except that there are some studies for computer software enterprises and also some data for small enterprises in the science parks promoted by DST.

In view of growing need and importance of successful technology based start ups and their significant contribution to the economy, it was considered desirable to undertake a pilot study related to the status and experience of technology based start up enterprises in the country. The study data has been categorised in two types of enterprises. One constitutes the enterprises based on well established and readily available technologies which have been termed as “Traditional Technologies” in areas like paints, pigments, chlorine based chemicals, synthetic dyes, organic chemicals, well known pharmaceutical preparations and fabrication units etc. The other enterprises involving higher level of processes or machines like bullet proof glass, precision machine tools, automated control systems, robotics, microwave systems etc. which have been termed as “Technology based ” enterprises.

The present study report is an effort in this direction, prepared by CITT at IIFT with the active technical financial support of Ministry of Science & Technology, DSIR. The report, however, is constrained by very limited availability of data. Nevertheless, it is expected that the Report will be an useful addition to the existing knowledge base and guide for the policy makers, entrepreneurs, academic and R&D institutions and others associated with the subject, since it is the first time that such a broad based Study has been made in the country.

1.1 Objective of the Study

The basic objectives, the study included:

1. To study the performance and status of the technology intensive start-up companies in select areas.

2. To assess constraints faced by the start-up companies.

3. To come out with the suggestions and recommendations to promote and support the startups in India.

1.2 Scope of the Study

1.2.1 This pilot study on Technology based Start-ups in India is limited to the following sectors. Start-ups with life span in the range of 5 to 15 years have been considered.

1. Defence Equipments & Accessories
2. Plastic & Machinery Parts
3. Auto Component
4. Electronics, Computer Software & Hardware
5. Dyes and Chemicals
6. Drugs and pharmaceutical intermediates
7. Others including traditional sectors

1.2.2 The sample data is limited to about 120 enterprises, and to the manufacturing sector only. Computer software has not been the focus area since same studies are available for this sector.

1.2.3 The project team at IIFT consisted of Mr. R. Dayal, Mr. Abhijit Mukhopadhyay (up to July'06), Ms. Arundhati Sarkar (up to Aug'06), Mr. Ajay Chauhan. The team worked under the guidance of Prof. & Head (CITT-IIFT) Dr. S.P. Agarwal. Mr. Ashwani Gupta, Scientist 'G', DSIR, has all the way provided technical support and gave useful inputs from time to time. Project Review Committee of DSIR for CITT reviewed, advised, and made useful suggestions during the study. The respondents during the survey provided information and data for the study. A presentation of the objectives, scope and findings, of the project was also made to the IIFT faculty and useful suggestions were received from the faculty. The faculty forum was chaired by the Director, IIFT. The questionnaire was designed and survey was carried out with the advice of the senior IIFT faculty, particularly Dr. Vijaya Katti, Dr. S. Bhatia and Dr. K. Rangarajan. The survey in Gujrat was carried out through Federation of Industries and Associations.

1.3 Methodology

The following methodology was adopted for the study:

1. Desk Research (survey of literature, internet scan, personal visits and discussions, electronic and physical media reports etc.
2. Identification of sources of information about the start-ups, venture capitalists and other financing institutions including SIDBI and GVFL.
3. Designing a questionnaire to collect information from identified start-ups, initially on a pilot basis.
4. Data Collection through responses received from start-up companies and information / data collected from the web-sites whenever available.
5. Compilation and analysis of data.
6. Preparation of draft report giving the findings and recommendations.

Step- I: Desk Research

Desk Research includes:

Literature survey of the relevant issues and framing the research questions for our survey based on discussion and issues identified from the available literature. The literature survey has been presented in Chapter II of this report where as the research questions framed have been discussed in subsequent pages of this chapter.

Step- II: Identification of sources of information

The various data sources used for collecting information for this purpose are given below:

(i) **Venture Capital Funds:** 62 venture capital funds registered with SEBI were contacted. (Appendix VII)

(ii) **Incubators:** A total of 30 incubators or science and technology parks in different technical institutions (including most of the IITs, NSIC Technical

Service Centre, ICICI Knowledge Park-Life Sciences Incubator, Defence Food Research Laboratory) were contacted.

(iii) **Company Directory:** The Company Directory of 2005, published by Department of Company Affairs, Government of India, was used to extract a sample of about 100 companies along with their addresses.

(iv) **Other Sources:** The website of National Science and Technology Entrepreneurship Development Board, NSIC website for small and medium entrepreneurs (techshowindia.com was consulted to find the supported companies names and addresses), of CD studies, UNCTAD and World Bank reports etc.

Step- III: Designing a questionnaire

The survey of the literature and the desk study led to the framing of the research questions. As discussed earlier in this chapter, the primary objective of the study has been to study the status and needs of the technology intensive start-up companies in select areas, and evolve policy measures to encourage and support start-up businesses and to come out with the suggestions and recommendations to promote the startups in India. First a draft questionnaire was tested for a small number of companies and subsequently modified based on inputs received.

The final designed questionnaires used for collection of data are given in the Appendix-III, IV of this report. The questionnaires were designed by CITT and finalised after incorporation of the suggestions made by DSIR and senior faculty members of IIFT.

Step- IV: Data Collection

The desk research provided the basic information required to proceed with the study and enlightened us about the need of the study at this point in time. On the basis of the desk research the well designed questionnaire was then sent to about 400

carefully selected Start-up companies. These companies were identified with the help of incubators or science and technology parks in different technical institutions including most of the IITs, NSIC Technical Service Centre, ICICI Knowledge Park, ICICI Life Sciences Incubator, Defence Food Research Laboratory were contacted. A visit had been made to the incubators in IIT Delhi, FITT and 7 existing incubating companies were interviewed and dully filled in the questionnaires were collected.

The response of the survey sent directly was hardly encouraging. Therefore the information was collected through personal visits to the participating companies during trade fairs like Auto Expo 2006, Auto Enterprises 2006, Plast-India 2006 and Def Expo 2006; and further supplemented through further clarifications from the companies. Apart from above sources the primary information was also collected through personal visits to 82 companies in an industrial cluster in Ankleshwar, Gujarat through Federation of Industries and Associations (Gujrat).

The number of start-ups on which the information as per the designed questionnaire available is given in table -1.1.

Table 1.1

List of responses received from start-ups companies in various sectors

Sectors	Number of start-ups companies for which information is available
Auto Components	**4**
Plastic Machinery & parts	**9**
Defence Equipments & Accessories	**12**
Electronics, Robotics, Computer & IT	**8**
Dyes & Chemicals	**60**
Drugs & Pharmaceutical	**11**
Others	**11**
Total	**115**

Step- V: Compilation and analysis of data

The analysis is done as per the identified research questions and received responses. Chapter 3 of this report provides the detailed analysis.

Step- VI: Findings and recommendations

Chapter 4 of this report gives the findings and recommendations.

Chapter 2

Review of Literature

Chapter 2

Review of Literature

2.0 Technology Based start-ups

New small businesses are considered to be especially vulnerable in the infancy period following start up. Many fail to develop into thriving, prosperous businesses. An understanding of the determinants of success and failure in new small businesses and the motivations of the founders in establishing a new business should provide valuable insights into the support needs of new businesses and their founders in the early years.

Innovative activity and capabilities are essential for economic growth and development. Given the large gap between the developed and developing countries in terms of technological advancement, the latter continue to rely heavily on technology transfer from the former in their development process. Sustainable economic development requires active, continuous technological effort by enterprises, and government policies to help firms attract technologies.

The dynamics of start-ups in an economy's technology sectors is an important indicator of technological performance for several reasons: **first**, the formation of new firms that focus on the development and introduction of new technology is a major source of innovation and technological advance. Many of these start-ups transfer new knowledge or new ideas for products and processes into commercial applications. Knowledge and ideas may either originate from public research or from established companies. In the former case, start-ups transfer academic findings into market products . In the latter case, so-called company spin-offs often pick up innovations (or ideas for innovations) that were not fully utilized by their parent firm, partly because a their market potential was estimated to be too low, partly because they were outside the market focus of the firm.

Secondly, start-ups spur competition in their markets. Especially for upcoming technologies and when new product markets develop, divergent innovation

designs compete with each other. Start-ups are likely to bring in new solutions and challenge established companies that enter these new markets, too. In general, intensifying competition is a relevant function of any new firm foundation which may impel innovation through fierce competition in any product market.

Finally, new firms represent a source for innovative firms that substitute those firms that failed and thus contribute to continuity in the number of technology-developing and innovating firms. Without new market entries, the stock of innovating small firms would likely diminish, restricting the innovative potential of the small and medium enterprise sector.

Enterprises are the principal agents of innovation today, but they do not innovate and learn in isolation. They rely on intricate (formal and informal) links with other firms and with public research institutions, universities and other knowledge creating bodies like standards and metrology institutes. In undertaking innovation, they react to government policies on trade, competition, investment and innovation. They seek human resources for innovation from the education and training system, and they draw upon the financial system for funding innovative efforts.

Altogether, technology-based start-ups will contribute to a shift in industry structure towards more technology-oriented activities. In order to assess this structural change through new firm formation, both start-up activities in non-technology sectors as well as firm closures have to be taken into account. If market entries in non-technology sectors exceed the number of technology-based start-ups, the balanced effect of startup activity on structural change will be negative. The same is true if the number of market exits of firms in the technology sectors is higher than those of market entries.

Moreover, market entries and exits together are measures of market dynamics and intensity of competition. Both may be viewed as a stimulator for innovation, as high dynamics of entries and exits open up new business opportunities, while fierce competition forces established firms to check and adjust their competitive capabilities – including innovation – regularly.

2.1 Studies

Some of the representative literature related to experiences in various countries are as follows:

1. The paper by Thomas Astebro and Irwin Bernhardt[1] investigates the relation between the survival of new small businesses and bank loans. This is done using a model that included other loan sources, human capital variables, and company and industry descriptors. They found that there is a negative correlation between having a bank loan and business survival, and a positive correlation between having a non-bank loan and survival. However, having a bank loan remains a good predictor of the survival of start-up companies otherwise. The investigation is based on data referring to a set of small businesses launched in 1987 in the United States. The data source contains certain background data for 1987 and business survival data for 1991 for these businesses.

The following results are found – (1) there is a significant negative correlation between having a bank loan and the survival of the business across the sample. This is in spite of those firms in the sample with a bank loan having higher than average sales revenues at start-up. In contrast, there is a positive and significant correlation between having a loan from either friends, family, former owner, or from obtaining a house mortgage and the survival of the business. (2) Both bank loans and other loans are significantly positive indicators of survival, *ceteris paribus.* However, the coefficient for non-bank loans is more than twice as large as that for bank loans in the equation that estimated the chance of business survival. This difference is not statistically significant, with the *t*-statistic only slightly greater than one, however. This equation contains a large set of observable proxies for human capital. That is, there is weak evidence of adverse selection against banks. (3) Among companies that had some form of loan, that the chance that the loan was a bank loan to be negatively related to the education and other observable proxies for human capital of the owners. That is,

[1] Astebro and Bernhardt (2003), Journal of Economics and Business.

there appeared to be self-selection by highly qualified owners in favour of sources other than commercial bank loans. (4) The model of the determinants of survival enabled the authors to identify a large group (22%) of start-up companies with highly qualified owners that had higher survival rates than start-ups with bank loans.

Only one previously published work by Cressy (1996)[2], concerning bank loans as predictors of start-up company survival that included a broad range of other predictors. Astebro and Bernhardt's results concerning the effect of human capital are consistent with Cressy's.

The US Census conducted the survey, "Characteristics of Business Owners" (CBO), in 3 years, 1982, 1987 and 1992. The 1982 and 1987 surveys covered a large set of human capital variables for multi-owner companies and sole proprietorships. The 1992 survey covered human capital variables only for sole proprietorships. This study relied on the 1987 CBO database, with its wider range of human capital variables for multi-owner as well as single-owner companies.

2. Thomas Hell mann and Manju Puri[3] in their paper examine empirical evidence on the impact that venture capitalists can have on the development path of new firms. They used a hand-collected data set on Silicon Valley start-up companies and analyzed the influence of venture capital on the professionalization of firms' internal organization. The evidence suggests that there is a "soft" facet to venture capitalists, in terms of supporting companies to build up their human resources within the organization. Venture capital is also important at the top; in that venture capital backed companies are more likely and faster to bring in outsiders as CEOs. These CEO replacements are often accompanied with the founder departing from the company, suggesting that venture capitalists also exhibit a "hard" facet in terms of exercising control.

[2] Cressy, R. (1996, September). Economic Journal.

[3] Thomas Hellmann and Manju Puri (July 2000), Stanford University.

The paper examines how these various roles are interrelated, and shows how the role of venture capital varies with the state of the company.

Theories of financial intermediation emphasize the monitoring role, where financial intermediaries gather information about the firms they finance. The question this study explores is – whether venture capitalists, as financial intermediaries, perform more active roles. Economic theory provides with some useful concepts that have been somewhat under-explored in the empirical corporate finance literature. First, there is the notion of "support" where the investor can take actions that are privately costly, but that benefit the company. We will call this support notion the "soft" facet of venture capital. Second, there is the notion of "control" where there is a conflict of interest between the entrepreneur and the investor, and where the investor can take an action that increases the value of the firm, although it may decrease the utility of the entrepreneur. We will call this support notion the "hard" facet of venture capital.

To conduct this study the authors used a unique hand collected data set of start-ups in Silicon Valley compiled from a combination of survey data, interviews, commercial databases as well as publicly available data. The data set is collated from combining two independent research efforts conducted over a period of several years, starting in 1994. The initial sample selection of Silicon Valley firms and data collection was organized by Baron, Burton and Hannan (1996 and 1999), which they supplemented in 1996 and 1997 by an additional financing survey and related data collection. To generate the initial list of companies three main data sources were used. The first two databases which listed firms in Silicon Valley were: Rich's Everyday Sales Prospecting Guide published by Rich's Guide, and Technology Resource Guide to Greater Silicon Valley published by CorpTech. A stratified random sample was selected where firms could have a legal age no older than 10 years and had to have more than 10 employees. Moreover, young and large firms were over-sampled and foreign firms were excluded. The Silicon Valley business press was used as a third data source to identify very young firms that were not even listed in the two databases mentioned above, and supplement the sample. The purpose of doing this was to

alleviate concerns that relying exclusively on guidebooks such as Rich's and CorpTech to construct the sample might under represent new start ups since there is sometimes a considerable time lag before newly created firms appear in these guidebooks. Hence the sample was supplemented by adding on 22 very young firms identified by tracking the Silicon Valley business press.

The sample consists of 173 start-up companies that are located in California's Silicon Valley. In order to collect the data a number of surveys were sent to different key people in the firm that covered a wide range of questions about historic and current aspects of the companies. Further, trained MBA and Ph.D. students conducted semi-structured interviews with key informants of the sample companies. An effort was made to interview the founders, the current CEO and the human resource manager for each company. This data was then augmented with any information provided by the company (such as a business plan). Additionally, publicly available information about each of the firms in the study was gathered from on-line data sources such as Lexis/Nexis, Dialog, Business Connection, ABI Inform. Further, for firms that had gone public, annual reports, 10-K or IPO prospectuses, where available were also collected, and used to augment the data. To obtain financing data, from autumn 1996 to October 1997 the writers sent out a survey addressed to the most senior member of the company in charge of finance. The survey asked for a complete financing history of the company since the time of founding. The information was augmented with data available from two commercial databases; Venture Economics and Venture One largely for the purpose of ascertaining which firms in our sample received venture capital. Then additional cross checks were performed on the data using the interview transcripts, researching public sources and placing calls to the companies to resolve remaining ambiguities. Augmentation of the data continued using public information as well as the interview and survey material. Considerable emphasis was put on measuring the timing of events such as the date of founding, the timing of all financing rounds or the date of CEO turnover.

The paper examines the conjecture that venture capitalists are a distinct type of investor that is characterized by being particularly closely involved with the

companies they finance. The authors examine whether venture capitalists play a role in the professionaliszation of the internal organization. Overall, the findings show that venture capitalists play a significant role in the development of the start-up companies. The influence of venture capitalists concerns not only the choice of the CEO, but it also seems to extend further down into the organization. The presence of venture capitalists can have a "soft" facet, in terms of providing support for building up the human resources of the company. But it may also have a "hard" facet, in terms of exercising control over CEO leadership changes, possibly at the cost of having founders leaving the company that they created.

The paper is of interest to the growing literature on the theory of firm, providing evidence on a question that has received surprisingly little attention so far, namely the process by which resources are put together into a new firm. The paper contributes to the large literature on corporate governance, which has tended to focus on large, public companies. In a private company setting of start-ups, the paper shows that CEO turnover is affected by the type of investor. And the paper speaks to the large literature on the role of financial intermediaries. In most of this literature, the role of the intermediary is to monitor information about firms. The evidence presented in this paper hints at a broader role, where the financial intermediary (in our case the venture capitalist) promotes certain business processes (in our case professionalization of a start-up).

The paper suggests some new research direction not just for empirical but also for theoretical work. By now, it is understood that financial intermediaries play a monitoring role, gathering information about individual firms. In the context of venture capital, however, it appears that this role is only part of a much larger role that has received much less attention. Is there a role for financial intermediaries more generally, in terms of providing expertise, contacts and other business services? And to what extent are the standard roles inversed, in the sense that financial intermediaries not only gather information *about* firms, but also *for* firms? This paper hopes to provide a starting point for further theoretical and empirical research on these important questions.

3. The aim of the paper by David B. Audretsch, Enrico Santarelli and Marco Vivarelli[4] is to shed some light on industry dynamics in Italy. For this purpose they used a large and comprehensive longitudinal data base, identifying the start-up of new manufacturing firms and their subsequent post-entry performance. This enables them to link the survival and growth of firms in each manufacturing industry specifically to their start-up size. While in a tobit regression (at the two-digit level) they find no evidence to link start-up size with survival, the growth rates are negatively and significantly correlated with initial size. As in previous studies dealing with other countries, this evidence suggests that Gibrat's Law fails to hold, at least for small, new-born manufacturing firms in Italy.

Gibrat's law is a descriptive relationship between size and growth -- that the size of units and their growth percentage statistics are statistically independent. Sometimes Gibrat's law is thought to apply to large firms, and sometimes to cities.[5]

The greatest obstacle to the direct measurement and analysis of the post-entry performance of firms has been the lack of panel data sets tracking the evolution of Italian firms subsequent to their birth. This paper used a data set from the National Institute for Social Security (INPS) which identifies new manufacturing firms (with at least one paid employee) born in January 1987 and tracks their post-entry performance at monthly intervals until the beginning of January 1993. The original INPS file has been subject to a cleaning procedure aimed at a correct identification of entry and failure times and at detecting inconsistencies in individual tracks due to administrative reasons, problems related to file truncation in January 1993, cancellations due to firm transfers and take-overs. This cleaning procedure has led to the reduction of the total number of firms included in the database from 1889 to 1570.

The survival rate is defined as the share of new firms started up in January 1987 still in existence as of January of each subsequent year. The hazard rate is

[4]David B. Audretsch, Enrico Santarelli and Marco Vivarelli (1999), International Journal of Industrial Organisation.
[5] http://economics.about.com/library/glossary/bldef-gibrats-law.htm

defined as the risk of failure at each point in time, on the condition that the firm had survived up to the previous time period.

The four main findings of the paper are: (1) survival patterns differ significantly across specific industries; (2) the hazard function has a bell shape with a peak at the second year of activity; (3) within each industry, start-up size is not statistically related to the likelihood of new-firm duration; and (4) Gibrat's Law does not apply to new-firm start-ups in most industries.

4. Christopher A Pissarides in his paper[6] study the role of company start-up costs for employment performance. The model is search equilibrium with a new concept for firms. Agents have an innate managerial ability and make a career choice to become either managers or workers. Managers set up firms, post jobs and match with workers. There is a unique equilibrium career choice, which is also optimal if the wage rule internalizes the search externalities.

This paper is a highly theoretical one. The conclusion is – the factors that can explain the differences in labor market performance are "structural," and should be sought in the institutional structures of the countries. The factor discussed in this paper is one neglected by previous studies (as claimed by the author), the regulatory framework for the establishment of new companies.

Perhaps the most wide-ranged paper in the literature reviewed is **the paper by Gavin C Reid.**[7] His paper has two goals – first, to provide an accurate characterisation of the new small firm in Scotland by reference to markets, finance, costs, business strategy, human capital, internal organisation and technical change. Second, to use these same features to discover salient differences between small firms which either survive or close, two or three years after inception. The empirical evidence is based on interview data from 150 entrepreneurs over a three year period. It was found that surviving firms were larger, better funded, lower geared, and more profit oriented. They also paid

[6] Chirstopher A Pissarides (September 2001), LSE.
[7] Gavin C Reid (1999), University of St. Andrews, Scotland.

higher wages, and were both more attuned to, and realistic about, new technologies. The conclusion formed was that firms which survived generally displayed wider and deeper competencies than firms which closed.

In the 'base year' of 1994-95 a sample of entrepreneurs, stratified by region, was interviewed, using an administered questionnaire. Then follow-up interviews were made with the entrepreneurs of firms which had survived in 1995-96 and 1996-97. The stratified sampling procedure has produced a set of firms which represent well the attributes of the larger population of new firms in Scotland. For example, by business type, the proportions in the sample were: sole trader (from home) (26%); sole trader (from business premises) (29%); partnership (19%); and private company (27%).

The study on which this paper is based aims to dispel ignorance by obtaining primary source data using field work methods. Crucial to access to the field are the 'gatekeepers' who effect introductions and provide 'ports of entry'. In this study they were the Directors of Enterprise Trusts in Scotland, these being small enterprise stimulating units which are jointly funded by the private and public sectors. The Directors of these units provided random samples of entrepreneurs from their client lists, subject to two restrictions, that they should be able to identify the date of inception of the enterprise, and that this date should be no more than three years from inception.

The *typical small firm of the study* in the base year (1994-95) had a headcount of seven (satisfying the micro-firm criterion of < 10 employees), gross sales of £234k at nominal prices, and produced or supplied four ranges of products or services. Its main market was local, and it had about 11 major rivals and 24 minor rivals. Competition was regarded as strong, particularly with respect to price, advertising and salesmanship. The good or service supplied was differentiated, and the firm competed independently against a dominant rival and a few small firms. Gross profits were about £50k and net profits about £15k, and the entrepreneur had sunk about £13k in the business at inception. Typically, neither a bank loan, nor outside equity was used to help launch the business.

Various features of these firms are studied in this paper – ranging from market, finance, costs, business strategy, human capital, organization, technical change to competitive pricing, advertising and salesmanship.

2.2 Relevant issues and factors coming out of literature survey

1. **Choice of a time period for the study:** Many of the studies tried to consider companies with a very new initiation background, while some of them took a longer time period (for example, 10 years) to choose the companies.
2. **Choice of firms / companies:** Different studies have employed different criteria for choice. For example, while some of them did not restrict scope of the study according to number of employees, some of them fixed a criteria of labour force grater than or less than 10. However, more or less all the studies confined the scope to small and medium sized firms and companies.
3. **Size of the firm:** Some studies have shown that size of the firm has an effect on survival (large start-ups have a better possibility to survive) while some studies say that start-up size and growth rates are statistically independent.
4. **Nature of loan:** Source of loan, according to the studies, makes a difference in the chances of survival for the small firms. There are differences in survival rates for bank, non-bank or any other form of loans.
5. **Background of the owner / promoter:** The educational and other qualifications of the owner / promoter make difference in policy making and the rate of survival. For example, few studies concluded that qualified owners stay away from commercial bank loans.
6. **Number of owners:** Some studies found that multiple owner firms have a better chance of surviving than the single-owner firms.
7. **Role of venture capitalists:** A few study quoted the role of venture capitalists in the evolution of the start-up companies, particularly in professionalisation and team-building which also affect the survival rate.
8. **Aim and vision of the owner:** According to one study, the firms with owners who are trying to maximize the rate of return of their capital in the short term

have better chance to survive than the owners who are pursuing greater market share or a longer term growth of the company.

9. **Technical change:** Technical innovation or upgradation is also a factor affecting the survival. Technical issue remains an important policy decision in this regard. For example, a small micro firm may or may not decide to upgrade after considering the cost factors and competitiveness vis-à-vis the industry.
10. **Business strategy and marketing:** Deeper knowledge of the market and appropriate marketing strategy also are very crucial for survival of a small start-up company. Advertising and salesmanship are two related factors which may affect the performance and ultimately survival.
11. **Organizational and management issues:** Within organization all sorts of hierarchical issues have to be sorted out and the management has to be innovative and flexible, according to some of the studies. And problems in these areas can affect the survival of the firm.
12. **Human capital:** Qualifications, general or technical, of the employees have a direct bearing on the performance of the company.
13. **Wages:** Wages paid to the employees play an important role in surviving. According to one of the studies, the firms with higher wage rates have the proportionally better chance of surviving.

Thus factors affecting performance of start-ups in other countries from literature survey in a nutshell are:

1. Credit availability
2. Educational and professional background of the promoter (s)
3. Number of owners
4. Capital structure and nature of loan (debt preferred over equity, bank vs. non-bank loans)
5. Technological change and adaptability towards newer technology
6. Role of VC (if the company has taken VC fund)
7. Size of initial investment
8. Skill and size of workforce employed
9. Wages paid to the workers

10. Knowledge and information of markets
11. Business / Marketing strategies
12. Organizational and management issues
13. Future aim and vision (companies with short term achievable goals do better)

2.3 Technology Innovation

It may be seen from the factors affecting performance that the technical progress is the key driver of growth and development. Growth accounting exercises that seek to separate the contribution of input expansion and productivity increase have shown that the later accounts for a substantial part of output increases, both at the micro and the macro level. Hence public policies to promote research, innovation and access to technology are at least as important as human resource and capital market development for promoting growth.

Technological progress involves improvement in skills, better capital equipment and the introduction of new products, processes and business methods. It requires investment in education and research and in technology extension. It is embedded in the processes of human and material capital accumulation and cannot be dealt with separately from them.

In a developing country like India, much of the know-how will come from what is known as enterprises catch up with what is already available. Even here a certain technological capacity is necessary to adapt technologies to local conditions. Moreover there are sectors like agriculture and health where established technologies may not be adequate for local needs and conditions. This has been recognized in India and a large network of publicly supported research institutions has been built up and enterprise level R & D supported with fiscal incentives.

With the opening of the economy to greater domestic and international competition, Indian industry has to move to the frontiers of known technological options. At this point continued technical progress can no longer be based on catching up with what is already available but will require a capacity to innovate and bring innovations to the market. More generous funding, a stronger result

orientation and better inter-connection between public research institutions and corporate R & D will help, but will not be enough. In a market economy the role of the capital market is crucial and what matters most are the instruments and institutions available to the prospective entrepreneur for sharing in the risks of potential failure and the rewards of success from innovation.

2.4 Venture Capital

Venture capital for technology innovation is a special type of financing arrangement. It is different from other institutional capital because its provision is customized to the needs of the receiver and the skills of the provider and requires close, ongoing, face-to-face interaction. It must be seen as part of a spectrum of funding that an enterprise may tap at different stages of its life cycle. An enterprise financed by a VC fund may have obtained some initial funding from family and friends or from an angel investor. It may at a later stage be financed by a private equity fund. At some stage in its life cycle it will receive funds from banks and development finance institutions. It could in time graduate to a point at which it obtains resources from a stock or bond flotation. The effectiveness of a venture funding system depends on this entire range of options for capital finance. Thus without an adequate system of funding at the very early seed stage the deal flow for venture capital may be sparse. At the same time the availability of early stage venture funding will depend on the exit options made possible by strong private equity funds and a healthy stock market.

2.5 India a Major Player in Global Start - Ups

India is playing a major role in a growing trend of new companies that are launched as global businesses right from the beginning. These businesses, often in technology sector, set up headquarters in Silicon Valley to take advantage of funding and ideas, but have major operations in places like Bangalore, giving them access to overseas markets as well as an increasingly innovative pool of talent. India, with its booming tech economy and wealth of engineering talent, has become one of the biggest participants in the 'global garage'. In the past three years, venture capitalists have invested more than $400 million in US-based start-ups (new businesses) operating in India. In the past 15 months, Silicon

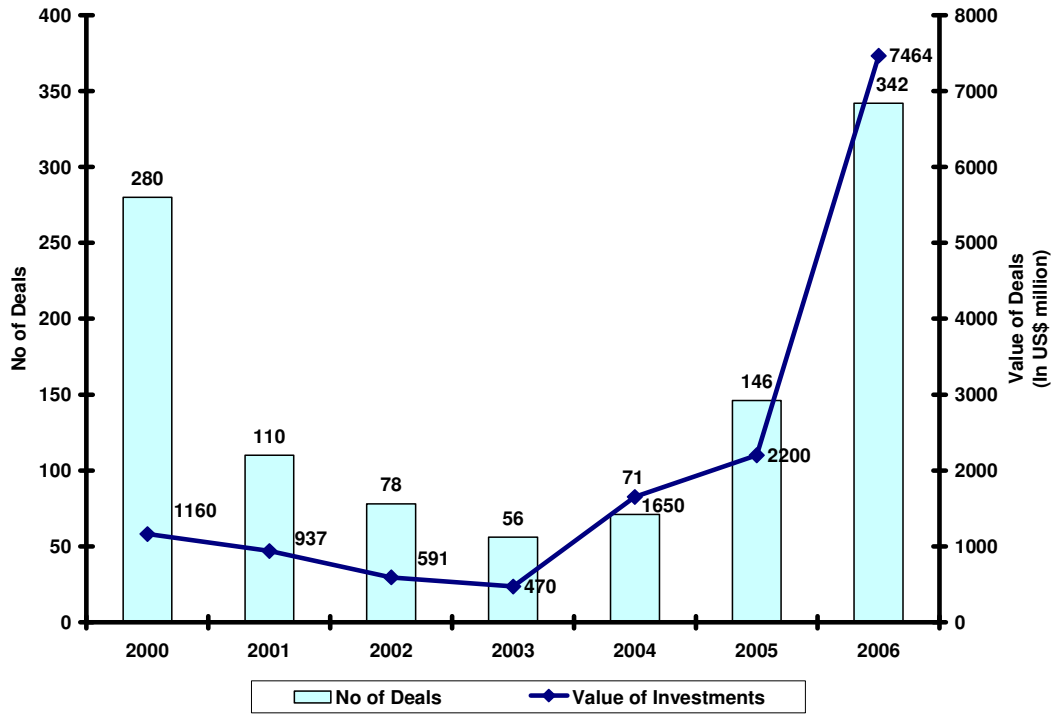
Valley Bank has helped as many as 50 valley start-ups set up offices in India. Managing the far-flung business is not simple, but companies have no choice, as India and China become major economies.

2.6 Status of Venture Capital in India

There are 90 domestic venture capital funds and 80 foreign venture capital (VC) investors currently registered with SEBI as on February 2007. (Ref.- www.sebi.gov.in)

As Figure 1 shows, the number of deals and the investment in India has been increasing substantially. For example, US $1650 million in investments were made in 2004 surpassing the $1160 million in 2000 by almost 42%. These investments reached US $2200 million in 2005, and during 2006, VCs and Private equity (PE) firms have invested $7460 million (excluding debt financing).

Figure 1: Total Number and Value of PE and VC Investments



Source: IVCA and Venture Intelligence India

Table 2.1 shows the division across various sectors with in which VC and PE investments have been made with respect to number of deals in 2004 and 2005.

Table 2.1: Percentage of the number of deals by VC and PEs in various sectors

Sectors	**2004**	**2005**
IT & ITES	27.0	38.0
Manufacturing	19.0	9.86
Healthcare & Life Sciences	11.0	15.5
Banking, financial services & Insurance	6.0	8.45
Textiles and Garments	9.0	5.64
Media	6.0	1.40
Others	22.0	21.13
Total	**100.0**	**100.0**

Source: Various reports of Venture Intelligence India

Table 2.2 given below provides a break-up of the total value of investments into early-stage investments (primarily by VCs) and late-stage investments and Private Investments in Public Equity (PIPEs) (primarily by PEs).

Table 2.2: Value of Deals (in $ millions) Based on the Type of the Investment

Year	2000	2001	2002	2003	2004	2005	2006 (Q1&Q2)
Early and Mid Stage VC	342	78	81	48	150	103	86
Late Stage and PIPEs	819	859	510	422	1,500	2,097	3,394

Source: Evalueserve, IVCA and Venture Intelligence India

VCs are mainly investing in following hot sectors: BPO, IT and IT-enabled services, Software Products (Mainly Enterprise-focused), Wireless/ Telecom/ Semiconductor, Banking , PSU Disinvestments , Media/ Entertainment, Bio Technology/ Bio Informatics, Pharmaceuticals, Electronic Manufacturing and Retail.

2.7 VC players :

2.7.1 Indian Government Funds: Some Indian state government funds are actively investing in India. These include SIDBI Venture Capital Ltd., Gujarat Venture Fund Ltd., Rajasthan Venture Capital Fund (RVCF), Andhra Pradesh Industrial Development Corporation Ltd. (APIDC), Canbank Venture Capital Fund Ltd., Rajasthan Asset Management Co. Private Ltd., Karnataka Information Technology Venture Capital Fund and Kerala Venture Capital Fund Private Ltd.

Investments from these institutions have the advantage of lower 'cost' of capital and hence can be more attractive to entrepreneurs; however, the maximum amount of capital available under these funds is $500,000.

2.7.2 Large Company Funds: For the last 3 to 5 years, many large companies have also been making early stage and mid-stage VC investments. Such companies are mostly investing in their own industries and leveraging their expertise with a longer-term view of potential acquisitions. Large company funds operating in India include those set up by high-tech firms such as Intel, BlueRun Ventures, Motorola, SAP Ventures, Siemens, Acer Technology Ventures, and Cisco. In addition, several financial companies and a few Indian conglomerates including the following have small VC funds: Kotak, Reliance Capital, JM Financial, Religare (owned by Ranbaxy), State Bank of India, Banc of America Equity Partners Asia, Unitech and Piramal.

2.7.3 VC Entrants from the US: Several US-based VC funds have also been investing in the Indian market for the last six years. So far, these funds have been investing in early and mid-stage technology companies dealing primarily with consumer Internet, mobile devices, wireless and wire-line, IT services, BPO services, software and hardware products, electronics and semiconductors. Most of these VC firms are: Westbridge, Oak Investment Partners, Matrix Partners, Sherpalo Ventures, View Group, Bessemer Venture Partners, Trident Capital, Walden International, New Enterprise Associates (NEA), Canaan Partners, Softbank Asia International, International Finance Corporation, Artiman Ventures, Columbia Capital, Gabriel Venture Partners, Norwest Venture Partners, Austin Ventures, Sigma Partners, Charles River Ventures and Telesoft Partners.

2.7.4 Non US-based Funds: These international funds largely invest in early stage and mid stage companies and include Barings, 2iCapital Private Ltd., Aavishkaar India, 3i, Chrys capital Management Companies, HSBC Private Equity Management (Mauritius) Ltd., IL&FS Investments Managers Ltd., Information Technology Venture Enterprises Ltd., Indian Direct Equity Advisors Private Limited, Kotak Mahindra Finance Ltd, Merlion India Fund (Standard Chartered Private Equity) and SICOM Capital Management Limited.

2.8 Brief details of few Indian VC companies:

2.8.1 Gujarat Venture Finance Limited (GVFL)

GVFL Ltd. (formerly Gujarat Venture Finance Limited) started in 1990 at a World Bank initiative under the aegis of Gujarat Industrial and Investment Corporation (GIIC), GVFL Ltd. is a 'classical' venture capital company focused on funding small and medium technology-based enterprises.

Over the past 17 years, GVFL Ltd. has raised five Venture Capital Funds with a cumulative corpus of Rs. 1362 million and is currently in the process of raising a SME Fund. These funds are invested in 60 companies across the country, which are systematically provided financial and managerial support by GVFL Ltd. Today, GVFL Ltd. has divested from 52 out of 60 investee companies. List of GVFL's portfolio companies are given in appendix-viii.

2.8.2 SIDBI Venture Capital Ltd

SIDBI Venture Capital Limited (SVCL) is a wholly owned subsidiary of SIDBI, incorporated in July 1999 to act as an umbrella organisation to oversee the Venture Capital operation of SIDBI. SVCL will manage the various Venture Capital Funds launched/ being launched by SIDBI. Current fund managed by SVCL are:

1. National Venture Fund for Software and Information Technology (NFSIT)
2. SME Growth Fund (SGF)

National Venture Fund for Software and Information Technology (NFSIT):

- It is a close ended 10 year fund with an initial corpus of Rs. 1000 million/ US$ 22.22 million
- The main objective of the fund is to meet the total fund requirements of the software and IT companies, particularly Small Enterprises.

SME Growth Fund (SGF):

- It is a close ended 8 year fund dedicated to SME sector with an initial corpus of Rs. 5000 million/ US$ 111.10 million.

- The main objective of the fund is to invest in companies at early stage as well as in second round financing.

List of SIDBI Venture Capital portfolio companies is given in appendix-ix.

2.8.3 ICICI Venture Funds Management Company Limited

ICICI Venture (formerly TDICI Limited) was founded in 1988 as a joint venture with the Unit Trust of India. Subsequently, ICICI bought out UTI's stake in 1998 and ICICI Venture became a fully owned subsidiary of ICICI.

ICICI Venture is one of the largest and most successful private equity firms in India with funds under management in excess of USD 2 billion. Current funds managed by ICICI Venture are:

a. Private Equity Fund
b. Real Estate Fund
c. Mezzanine Fund

***Private Equity Fund*:**

ICICI Venture manages USD 1.5 billion of private equity assets. ICICI Venture is currently investing out of its broad-based, buyout & late stage growth capital Fund, the USD 810 million India Advantage Fund Series II raised in 2006. ICICI Venture also manages the private equity portfolio created out of its USD 245 million India Advantage Fund Series I raised in 2003 and which is now fully invested. In addition, it manages a portfolio of private equity investments of USD 425 million.

There are following types of funds under management in private equity:

1. India Advantage Fund Series 1 (IAF Series 1): USD 245 million
2. India Advantage Fund Series 2 (IAF Series 2): USD 810 million
3. ICICI Emerging Sector Fund / Others : USD 425 million

Real Estate Fund:

ICICI Venture presently manages India 's largest Real Estate Fund, with over USD 550 million under management. ICICI Venture has a strategic long term joint venture with Tishman Speyer Properties for investments and development of property in India. The real state fund consists of :

1. India Advantage Fund (Real Estate Series 1) : USD 550 million

Mezzanine Fund:

ICICI Venture is in the process of having its first closing of India Advantage Fund VII (Mezzanine Fund-I), India's first Mezzanine fund. The target corpus of the fund is USD 110 million. Mezzanine is rendered with flexibility to fit in both the investor's and investee company's requirements and also provides medium to long term capital without significant ownership dilution.

List of ICICI Venture portfolio companies is given in appendix-x.

2.8.4 Infinity Venture Capital Ltd

Infinity is an investment group specialising in investment that leverage India's growing economy and its competitive advantages. The group currently runs two funds, which are:

(A) Infinity-I: Founded in November 1999, Infinity is India's first institutionalized angel fund which brought together Indian entrepreneurs and overseas entrepreneurs together - to fuel growth of start ups in India. Infinity closed fund raising in February 2000 and has invested in about 18 companies - mostly in Series A or Seed round.

(B) Infinity-II: It is focused on investments in cross border technology companies.

List of Infinity Venture Capital portfolio companies is given in appendix-xi.

2.9 Some Observations

- Start-up companies in general have very low initial funding requirements whereas VC funds are large funds and their minimum investment size is much larger than the requirement of start-up companies.
- VCs are generally not taking risk in manufacturing/engineering start-ups, though some of the VCs are now maturing and diversifying their investments to technology based start-ups.

- Start-ups often lack financial discipline and have limited experience in implementing effective financial processes. This makes task of a VC difficult in due diligence and monitoring phases.
- Studies about the experiences and performances of VC supported enterprises in India are not readily available, though sporadic success stories are available, mostly for large enterprises.
- Most of the VCs and VC supported enterprises listed in appendices(vii, viii, ix, x and xi) were contacted for the present study but the response has been extremely poor.

Chapter 3

Data Analysis

Chapter 3

Data Analysis

3.0 Survey and Collection of data

This chapter on analysis of the data aims to analyse the information obtained from the survey of selected Start-ups. The analysis is done in the order of and according to the parameters of research in chronological order. Answers to these research questions are attempted with the information obtained from the responding firms.

To begin with, we first introduce the start-ups approached for the survey and those which responded to the questionnaire. 400 start-ups in different sectors were identified and 115 responded.

3.1 Parameters for Data Analysis

The various parameters used in study for analysis are given below. These parameters of study were decided on the basis of issues and factors coming out of literature survey in designing the questionnaire in consultation with faculty of IIFT.

The various parameters are :-

1. Date of incorporation
2. Ownership Pattern
3. Background of the promoter
4. Aim and vision of the company
5. Basic details of foreign collaboration
6. Source (s) of technology
7. Technical tie-ups (if any) with R&D labs, universities or other agencies in India or abroad

8. Level of technology employed in the production process?

(a) Contemporary to national standards (b) lower than national standard
(c) Higher than national standards but lower than international standards
(d) Contemporary to international standards

9. Initial capital investment

10. Type and year of funding

11. Objectives and areas of operations (products / processes, services etc.)

12. R&D and related expenditures (including technology transfer, know-how fee, royalty etc.)

13. Human capital

14. Highlights of experiences, performance and achievements since inception

15. Constraints faced

16. Whether your company has

(a) survived successfully

(b) still evolving

(c) is struggling or has been bound up

17. Annual turnover upto last 3 years or as applicable

18. Profit after tax upto last 3 years or as applicable

19. Exports (if any) upto last 3 years or as applicable

20. Suggestions for improving the rate of survival of technology based start-up Companies

3.2 Company Profile

An analysis of company profiles of the 115 responding start-ups given in appendix-I, reveals the following trends:

(i) Majority of companies are in partnerships 66.96% (77/115) where as 26.96% (31/115) are Private Ltd Company.

(ii) Most of the promoters are simple graduates 73.04% (84/115) followed by engineering graduates 19.13% (22/115), diploma & ITI certificate holders 3.48% (4/115) and only few have other professional qualifications.

(iii) As far as source of technology is concerned, majority of them are developing products through indigenous technology 42.39% (92/217) and own R&D 27.65% (60/217), while second major source of technology is sourcing from partner 21.66% (47/217). Only a few have collaborated with Indian and foreign labs.

(iv) Very few have tie-ups with either university or Technological labs

(v) Most of companies have initial capital investment in the bracket of 25 lakh to1 Crore.

(vi) The source of funding is mainly banks or financial institution 41.58% (79/190) and self finance 40.53% (77/190). Only a few have utilized other sources of funding.

(vii) Average expenditure on R&D against turnover usually varies from 1 to 2 % and in exceptional cased beyond 2 %.

(viii) Average Annual Turnover for these companies varies from Rs few thousands to more than 1 Crore. As the turnover goes on increasing to upper range, number of companies in that bracket goes on increasing and after reaching turnover of above 1 Cr, number of companies decrease.

(ix) Average Profit After Tax for these companies varies from Rs few thousands to more than 1 Crore.

(x) Average Exports for these companies varies from Rs few thousands to more than Rs. 20 Crore Most of the companies fall in the bracket of few thousands to 5 lakh, followed by 25 lakh to 1 Crore and10 lakh to 25 lakh.

(xi) Works force employed by the start-up companies mainly consists of technical people 54.53% (1386/2542) consisting of ITI certificate holders, diploma holders and other professional qualification followed by undergraduates 24.19% (615/2542) and graduates 16.68% (424/2542) with only a few post graduates and higher degree holders.

3.3 Analysis of Traditional Technology based Start-ups

3.3.1 Total no of responses received = 82

The information about the companies had been collected through direct interviews of companies in Ankleshwar Industrial Estate, Gujarat. In Traditional sectors 82 companies had been interviewed.

3.3.2 Companies Incorporated between 1991-2005.

The period for consideration of the Start-ups in present study is one and half decade, starting from 1991 up to 2005.

3.3.3 Ownership Pattern

If one looks into the ownership pattern of the 82 companies, then there is no single company in sole proprietorship, 71 of them are in partnership, 11 are private limited companies and there is no single company in Public limited. So, pre-dominantly there is a preference for partnership mode of setting up business, or one may see it as an evolution of companies from partnership mode to private limited mode and finally to public limited option where the company can raise funds going to public, that is by issuing shares or debentures. However, since there is no single public limited in the sample, it may also imply that small promoters or entrepreneurs are not that much enthusiastic or capable of transferring their rights over the companies they run, by transforming into public limited mode unless they attain a certain turnover level.

3.3.4 Educational & Professional Background of Promoter

If we look into the educational profile of the promoters of these 82 companies, then it is found that most of them are simple graduates[1]. Out of 82 companies only two of promoters have either engineering or other professional degree.

[1] Students who have completed the equivalent of a bachelors degree (three-to-four years of school after secondary school) at an accredited college/University.

3.3.5. Aim of Business

All of the respondents (82/82) have reported that their main of starting the business was self employment for income.

3.3.6. Source of Technology

If we look into the various sources of technology utilized by Start-ups, we find that majority of them are developing products through indigenous technology and own R&D, while second major source of technology is sourcing from partner.

3.3.7. Technical Tie-ups with R & D labs, universities etc.

None of these companies had any formal technical tie-up with either R & D labs or universities etc .

3.3.8. Investment in Plant and Machinery

Initial capital investment for these 82 companies varies from Rs 25 Lakhs to Rs. 5 Crore. Most of the Start-ups in this sector have invested in the range of Rs 25 lakh to 1 Cr.

3.3.9. Funding Pattern

3.3.9.1 Types of Fund

The most preferred type of funding method utilized by traditional start-ups is self-financing and bank loans. Out of 82 Companies (utilizing multiple options of funding) 63 were Self-financed and 59 were funded by Banks. In other way we can say that other sources of funding are not readily accessible to Start-ups.

There is a lot of budge around saying that in the new Indian economy venture capital funds are available for even newer companies, but in reality venture funds are pretty hard to get for the newer companies unless they are already established in the market or affiliated with big business houses. In Indian context, Angel funding (in which individuals with high net worth and rich business

experiences provide funds and do a sort of hand-holding to new start-ups) is much needed in current situation of the economy.

3.3.9.2 Year of Funding

Year of funding for these 82 companies varies from 1991 to 2005.

3.3.9.3 Are there difficulties in acquiring fund

Companies are facing difficulty in acquiring fund and as per survey, 72 out of 82 companies said that acquiring funds is the major problem.

3.3.9.4 If difficulties in acquiring fund, please mention

Lengthy time procedure is identified as the most limiting factor hindering start-ups from accessing financial support services and reported as the major problem by the respondents. Second major limiting factor problem reported by respondents is High interest rates.

3.3.9.5 Problems of performing due to Lack of Funds

Due to lack of funds startups are not able to acquire better machines, equipments, technology and thus not able to efficiently compete in global market place.

3.3.9.6 Suggestion for Improvement in Credit/fund Availability

When asked about the suggestions, how credit availability could to be improved for the SSI. Respondent felt there is need of greater roles to be played by financial institutions to improve the fund availability; there should not be any collateral for financial assistance up to 1 Cr and simplification of all procedures and formalities for getting loan.

3.3.10. Areas of Operation/Product/Services

The area of operation of sample includes: Dyes & Chemicals, Drugs & Pharma and Other manufacturing companies. Out of 82 companies, 45 from Dye

manufacturing, 14 are from Chemical , 7 from Pharma, 4 from Drugs ,1 from Perfume, and 11 from other unclassified group.

3.3.11. Average R & D Expenditure as % of turnover

Expenditure on R&D of these 82 companies mostly varies from 0-2 % of respective turnovers and in exceptional cases beyond 2 %.

3.3.12. Details of work force

3.3.12.1 Education Level

While analyzing the educational level the of the workers employed in these companies, we find that traditional start-ups are employing undergraduates[1] in large numbers as compared to other categories.

3.3.12.2 Steps to perform better

The various steps that could lead traditional start-ups to perform better are : First major step reported by them, which could lead them to perform better, is Modernisation of production facility and second improving technology and product quality.

3.3.12.3 Suggestions for labour market reform

Most of the respondents have suggested that simplification of laws can correct the problems related to labour market and secondly implementing a Single insurance scheme instead of PF, gratuity & other benefits will lead to better functioning of these traditional start-up companies.

3.3.13. Performance

3.3.13.1 Sales and Profit Growth

Sales are steadily increasing from year 1991-95 to 2000-05.

Profit is steadily increasing from year 1991-95 to 2000-05.

[1] Students who have completed secondary school, but have not completed another degree beyond the secondary school

3.3.13.2 Factors which will affect performance in next 5 years.

Various factors which were reported by respondents, which will affect the performance of traditional technology based start-ups in next 5 years in decreasing order of intensity are:- cost of production, marketing, adoption of clean technology, Chinese competition and strict pollution control norms.

3.3.13.3 Govt Policies that have affected Companies performance

Major government policies which have affected the performance of traditional technology based companies in decreasing order of intensity include: Stringent pollution & environmental control norms, Import Policy (specifically China) and frequent raids by vigilance team.

3.3.13.4 Factors for Continued Good Performance

Factors which were suggested by respondents, leading to good performance of traditional technology based start-ups in decreasing order of importance are: easy availability of raw materials, greater control on enforcement agencies, liberalization of laws, more encouragement for exports and greater control on imports

3.3.13.5 What are the factors due to which Companies in Your sector/cluster did not survive?

Some of the factors which were reported by respondents, which lead to failure of companies in their cluster in decreasing order of severity are: Lack of marketing assistance, Competition from China and harassment by enforcement agencies.

3.3.14. Constraints

3.3.14.1 Constraints Faced

The constraints faced by Traditional Start-ups in India in decreasing order of intensity include: Government Policies 28.38%, access to finance 22.99%, Skilled labour 13.66%, access to modern technology 12.08%, Marketing strategy 11.65%, Marketing information 5.74%, High cost of raw materials 4.19% and others 0.70% (Management issues, Inexperience, Quality management, competition, Infrastructure). Thus government policies represent the greatest problem faced by start-ups in India and next to it is access to finance.

3.3.14.2 Elaboration on Constraints

Misinterpretation of laws by enforcement agencies is considered as the leading constraint by respondents, next to it is lengthy procedures & formalities leading to problems to entrepreneurs in running their business and lack of financial assistant is considered as the hindrance force because of which they are not able develop better quality products and expand to new markets.

3.3.15. Average Annual Turnover in Last 3 Years

Average Annual Turnover for these 82 companies varies from Rs few thousands to more than 1Cr but most of the traditional technology based start-ups have in the range of Rs 25 Lakhs to Rs. 1 Cr.

3.3.16 Average Profit After Tax in Last 3 Years

Average Profit after tax for these 82 companies varies from Rs few thousands to more than 1Cr but most of the traditional technology based start-ups lie in the bracket of Rs few thousands to Rs. 5 Lakhs.

3.3.17 Average Exports in Last 3 Years

Reported Average Exports for these companies varies from Rs few thousands to more than 1 Cr but most of the traditional technology based start-ups lie in the range of Rs few thousands to Rs. 5 Lakhs.

3.3.18 Average Cost of Production in Last 3 Years

Average Cost of production for these companies varies from Rs few thousands to more than 1Cr but for most of the traditional technology based start-ups, average cost of production varies from Rs 25 Lakhs to Rs. 1 Cr.

3.3.19 Market

3.3.19.1 Which Market your product sales mainly cater to ?

Traditional technology based companies are selling their products in all possible markets where they can reach but most of the companies are basically catering to domestic market only.

3.3.19.2 Affect on sales due to Market demand in recent years.

Majority of respondents reported that their sales have been affected due to changes in market demand because of rapid globalization.

3.3.19.3 How Did You Adjust the Market Demand

Most of the companies diversified or changed their product and utilized cost reduction measures both to adjust the market demand arising due to recent changes in the external environment because of increasing globalization leading to greater competition.

3.3.19.4 Policy Suggestions to Govt in case of Demand Mismatch

Various suggestions given by respondents to correct demand mismatch in decreasing order of intensity of importance are : Single Window system for Clearance of Applications, Imposition Of Anti-dumping duty on imports, Liberalization of Central excise, Customs and Labour Laws and better understanding of laws & policies by enforcement agencies

3.3.19.5 Reasons for Reduced Capacity Utilization

Various reasons for reduced capacity utilization given by respondents in decreasing order of intensity of importance are : stringent environment and labour laws and misinterpretation of laws & policies by enforcement agencies.

3.3.20. Technology

3.3.20.1 Whether the machines or technology of production changes after incorporation?

Majority of the traditional technology based companies have reported that they have changed the technology utilized in production.

3.3.20.2 Reason for implementing the change.

Traditional technology based companies have changed the technology utilized in production because of the following reasons in decreasing order of importance:- for increasing output, for exploring other markets, for exports, to become cost effective and to remain competitive in existing market.

3.3.20.3 Year in which change was made

Technological change was made all over the previous decade (1996-2005) but specifically it became more amplified after year 2000, when wave of globalization became more vibrant and stiffer competition emerged from foreign players.

3.3.20.4 Constraint Company faces for implementing a technical change.

The constraints faced by traditional technology based start-ups in implementing a technical change in decreasing order of intensity includes: lack of information, non-availability of required technology, lack of fund for investing in new technology and procedural problems, Thus lack of information represent the greatest problem faced by traditional technology based start-ups in implementing a technical change.

3.3.21. Are there any standards/ certification relevant for your product

Majority of respondents reported that there are no standards/ certification relevant for their products except 4 companies reported that they have standards/ certification for their product.

To sum up :

1. Majority of companies are in partnerships 86.59% (71/82) whereas 13.41% (11/82) are private limited companies.
2. Most of the promoters are simple graduate 96.34% (79/82) and only few have other professional qualifications.
3. The main aim of business of the entrepreneurs was self employment for income.
4. As far as source of technology is concerned, only a few have collaborated with Indian labs otherwise the technology has comes from the partners themselves.
5. None of companies had formed technological tie-ups with either university or Technological labs.
6. Most of companies have investment in plant & machinery in the bracket of 25 lakh to1 Crore.
7. The source of funding for companies is mainly self finance 43.44% (63/145), banks or financial institutional funding 40.69% (59/145) or private loan 13.79% (20/145) in that order.
8. Average expenditure on R&D against turnover usually varies from 1 to 2 % and in exceptional cased beyond 2 %.
9. The works force employed mainly consists of under graduate with only a few graduates, post graduates and higher degree holders.
10. Most of companies lack in skilled working force and are not using the modern techniques of production for improving their quality of product.
11. The profit is steadily increasing from year 1991-95 to 2000-05.
12. Most of the companies have turnover in the range of Rs 25 lakhs to Rs. 1 Crore
13. Most of the companies have average exports in the bracket of Rs few thousands to Rs. 5 Lakhs.
14. The constraints faced by Traditional Start-ups in India in decreasing order of intensity include: Government Policies 28.38% (806/2840), access to finance 22.99% (653/2840), Skilled labour 13.66% (388/2840), access to modern technology 12.08% (343/2840), Marketing strategy 11.65% (331/2840), Marketing information 5.74% (163/2840), High cost of raw

materials 4.19% (119/2840) and others 0.70% (20/2840) (Management issues, Inexperience, Quality management, competition, Infrastructure). Thus government policies represent the greatest problem faced by start-ups in India.

15. The various problems in government policies are:- Stringent Environment & Pollution control Norms 21.47% (122/568), Lengthy Procedures & formalities, extensive paper work 17.95% (102/568), Wrong interpretation of laws & policies of the govt. by the enforcement agencies 13.20% (75/568), Stringent norms of Labour Laws 13.20% (75/568), Present import policy 12.68% (72/568), Various Insurance Schemes 8.98% (51/568), Frequent Raids & Checking by Vigilance Teams 7.57% (43/568) and central excise and customs 4.93% (28/568).
16. The various problems in access to finance are: Lengthy time taking procedure 25.90% (57/220), High Interest Rates 22.27% (49/220), Lack of government support 18.64% (41/220), Reluctance of Funding Institutions/ Banks 14.55% (32/220), Collateral Security 10.00% (22/220) and Lack of Information 8.64% (19/220).
17. The various problems in marketing are:- Lack of Information about new markets for expansion 67.16% (45/67) constitutes the major problem for traditional start-ups followed by lack of access to media and publicity 17.91% (12/67) and reluctance of business community for business 14.93% (10/67).
18. The various problems related to technology are:-non availability of information 40.45% (36/89), non availability of required technology 32.58% (29/89) and procedural problems 26.97% (24/89).

3.4 Analysis of Technology Start-ups

3.4.1 Total no of responses received = 33

The information about the companies had been collected through direct interviews of companies from all over India. In Technology sector 33 companies had been interviewed

3.4.2 Companies Incorporated between 1991-2006.

The period for consideration of the Start-ups in present study is one and half decade, starting from 1991 up to 2006

3.4.3 Ownership Pattern

If one looks into the ownership pattern of the 33 companies, then there are 3 companies in sole proprietorship, 6 of them are in partnership, 20 are private limited companies and there are 2 companies in Public limited. So, pre-dominantly there is a preference for private limited mode of setting up business, or one may see it as an evolution of companies from sole proprietorship or partnership mode to private limited mode and finally to public limited option where the company can raise funds going to public, that is by issuing shares or debentures. However, since there are 2 public limited in the sample, it may also imply that small promoters or entrepreneurs are not that much enthusiastic about transferring their rights over the companies they run, by transforming into public limited mode unless they attain a certain turnover level.

3.4.4 Educational & Professional Background of Promoter

If we look into the profile of the promoters of the 33 companies, then it is found that most of them are from engineering background. Among these engineer promoters, more than 60% (20/33) entrepreneurs come with mechanical engineering background. This brings forth the importance of spreading

professional technical education as far as setting up of small technology based manufacturing units is concerned.

3.4.5 Details of Foreign collaboration

Only 2 companies have foreign collaboration and most of the companies have not responded .This may be due to their reluctance to disclose the fact because they fear this information can be utilized by their competitor or they actually do not have resources to collaborate with foreign partners

3.4.6 Source(s) of technology

If we look into the various sources utilized by technology start-ups , we find that except two companies, all the companies are developing products through their own R&D taking help from Websites and exhibitions.

3.4.7 Technical tie-ups with R&D labs, universities or other agencies in India or abroad.

9 Companies out of 33, have formal technical tie-up with R&D labs, universities or other agencies in India or abroad. This strengthens the point that in order to be both competitive locally and globally the newer companies are leaving no stone unturned to conform to international product standard.

3.4.8 Level of Technology Employed In the Production Process

As far as perceptions of the companies about their product standard is concerned, 25 companies believe that they are up to the international mark, 6 companies feel that their products are higher than national average but product standard fall short of international standard, and only 2 companies said that its product standard is equal to the national average standard. Probably, opening up of the economy has created a lot of competition in all sectors and as a result newer companies are conforming to international standard to be competitive both at domestic and international levels.

3.4.9 Initial Capital Investment

The initial capital investment for these 33 companies varies from Rs. Few thousands to more than Rs.1 Crore. Most of the Start-ups in this sector have invested in the range of Rs 1 lakh to 25 lakh as can be seen from the table.

3.4.10 Type of Fund

The most preferred type of funding method utilized by technology start-ups is bank loans and self-financing. In other way we can say that other sources of funding are not readily accessible to Start-ups.

3.4.11 Areas of Operation/Product/Services

The area of operation of sample includes: Defence Equipments & Accessories, Plastics and Machinery, Electronics Robotics Computer & IT and Auto components. Out of 33 companies, 12 are from Defence Equipments & Accessories, 9 are from Plastics and Machinery, 8 from Robotics Computer & IT and 4 from Auto components.

3.4.12 R&D and related expenditures as % of turnover (including technology transfer, know-how fee, royalty etc)

Expenditure on R&D of these 33 technology companies mostly varies from 0-2 per cent to up to 25 per cent of respective turnovers.

3.4.13 Basic Details of work force

While analyzing the educational level the of the workers employed in these companies, we find that technology start-ups are employing large number of technical people. Most likely because these are operating in hi-tech sector, which requires skilled and trained workers.

3.4.14 Constraints faced

The constraints faced by technology start-ups in India in decreasing order of intensity include: Government Policies 17.02% (16/94), access to finance 15.96% (15/94), Marketing 13.83% (13/94), access to modern technology 10.64% (10/94), High cost of raw materials 9.57% (9/94), Infrastructure 9.57% (9/94) and others (support system, Human capital, Inexperience, Quality management, competition, Business strategy ,Internal management). Thus government policies represent the greatest problem faced by technology start-ups in India.

3.4.15 Whether in your perception, your company has

(a) Survived successfully (b) still evolving (c) is struggling or has been bound up

When the companies were asked about their perceptions :– whether survived successfully or still evolving, 14 out of 33, opined that they are still evolving and 12 opined that they have successfully survived

3.4.16 Average Annual turnover in last 3 years

Average Annual Turnover for these 33 companies varies from Rs 5 lakh to more than Rs 20 Crore. Most of the technology start-ups have turnover in the range of Rs 1 Crore to 20 Crore.

3.4.17 Average Profit after tax

When asked about the details of Profit After tax, most of the respondent did not respond except 2 companies, which have in the range of 5-10 Lakhs and 10-25 Lakhs.

3.4.18 Average Exports up to last 3 years

Average Exports for these 33 companies varies from Rs few thousands to more than Rs. 20 Crore. Greater number of companies fall in the bracket of 25 Lakhs to 1 Crore ,10 to 25 Lakhs and 1 Crore to 20 Crore.

3.4.19 Suggestions by respondents for improving the rate of survival of technology based start-up companies

Sr. No.	Suggestions
Defence Equipments & Accessories	
1	Govt. should support new entrepreneurs and encourage for exports
2	Strong R& D base(need for survival),Technical expertise, Financial(FDI) & JVs, govt policy is OK ,encourage entrepreneurs to start up
3	No Response
4	Reduce Procedure for certification of quality
5	Reduce interest rate for SMEs (should be below 4-6 %),Should have information for new technology, exposure to new technology, more professional management,
6	Reduction in Corporate tax, excise, sales tax etc
7	Double taxation should be avoided, export incentive have to be reviewed, more transparency in working,
8	More transparency and liberalized
9	No Response
10	Market information for exporters
11	Should reduce time for obtaining Funds, procedural problem in exports, Govt policy should be entrepreneur friendly
12	Improving the product performance through continuous R&D ,absorbing technology & through new inventions
Electronics, Computer soft.& Hardware	
1	Strong Management team, Realistic, Competitive Business Strategy, Impeccable execution, value addition, more than just capital, VC participation
2	One industry partner must be associated with each company to provide constant input & support(This industry partner can be an individual or a company).This type of involvement provides direction to the technical startups to concentrate not only on technology but also on market., Amount of funding given in India is also limited which constrains the marketing effort that technical startups can put in.
3	More convenient and hassle free tax incentives to start ups; Not complicate further the taxing system by introducing taxes like FBT, in fact stress should be on simplifying the tax structure and also the registration procedures

4	Govt/other agencies must attempt to make pre-venture capital relatively easy available for people with a certain back ground and experience. However, this must be done only for companies who have survived for first three months or so on their own and who were founded using their own money, survival during the first three months determine the focus and determination of the management; Company must focus on providing a unique, compelling value proposition. 'Also-rans' or 'Copy-cats' or 'Cool concepts' will generally find it difficult to survive beyond a certain points; Management must keep a big picture in mind, once the compelling value proposition has been defined, focus on generating revenues as the business progresses, ideal situation is to be able to generate revenue every time and expense apart from personnel related expenses is incurred; Management must also keep a focus on intangible like brand, like IP, like partnerships and business relationship while on its way to realizing its plan; Management must attempt to include 'payment in kind' when making business deals
5	Provide Tax incentive /zero taxation/custom duties etc in a time based period, Incubation units should not work in isolation from external environment, Regulation to promote indigenous technologies, Make it compulsory for technologies being sold in India to have patent rights etc to transferred to Indian Companies.
6	Providing Research Support (both technical & Marketing),Provide seed funding Support, Provide mentoring and management support(from experienced entrepreneurs), Provide access to markets, Govt should open it's departments like defence & space for collaboration, outsourcing, subcontracting to work with technology start-ups.
7	Easy availability financial seed capital and awareness of the same**;** More physical/virtual incubators for guidance/support/consultancy to start ups**;** Better linkages, communications between experts (tech/mgt) and entrepreneurs**;** Promotion of risk taking and pro-entrepreneurship culture in the society in general.
8	Privatise all public sector units so that they can become customer base for technology entrepreneurs, Reform Engg education so that engineers can become entrepreneurs, Establish a transparent grant program to fund technology startups, Enforce the law so that corruption is penalized.

Plastic & Machinery Parts	
1	Foreign Trade policy should be liberalised , labour laws, technology development according to market demand
2	Interest rate unbearable/unviable, Govt procedure for taxation, records/filing is not possible to fulfilled by SSI because of manpower constraint, Need for free technical advice, More encouragement for opening SME.
3	There should be no taxation for small entrepreneurs, Govt. should facilitate technology upgradation and Information.
4	Marketing Cost, Poor infrastructure development in India, High cost of Raw material, import duty, excise duty
5	Taxation, Labour laws, Documentation should be simplified, Knowledge about change ,attitude, Behaviour should be imparted to people to succeed in international market.
6	Provide funding support for developing technology(future technologies).Infrastructure development, No import duty on Raw materials, Custom duty, More import facilities for components, Spreading awareness about govt policies to SSI..
7	Technology sharing b/w mould makers to face competition at the global level, Capital requirement for expansion and technology development, taxation, fringe benefits.
8	Collaboration for Technology, Good management, Funding, Provide more information(Foreign Trade Policy)
9	Technology funding, market information for exporters, training for young entrepreneurs, Industry standards program

To sum up :

1. Majority of companies are in Private Ltd Co. 60.61% (20/33) where as 18.18% (6/33) are in partnerships.
2. Most of the promoters are engineering graduates 63.64% (21/33) followed by diploma holders 12.12% (4/33) and other professional qualifications 9.09% (3/33).

3. Majority of companies are developing products through indigenous technology, while a few of them have technical tie-up. Some of them are using open sources for fulfilling their technological needs.
4. In technology based companies, 9 Companies out of 33 (27.27%) have formal technical tie-up with R&D labs, universities or other agencies in India or abroad. in order to be both competitive locally and globally and to conform to international product standard.
5. Most of the companies have invested in plant & machinery in the range of Rs 1 lakh to 25 lakh.
6. The source of funding is mainly banks or financial institutional funding 44.44% (20/45) and self finance 31.11% (14/45). Only a few have utilized other sources of funding like venture capital 8.89% (4/45), foreign investment 8.89% (4/45) and capital market 2.22% (1/45).
7. Expenditure on R&D varies from 0-2 % to upto 25 per cent of respective turnovers and a major group is spending in range of 8-10 %.
8. Large number of technical people consisting of ITI certificate holders, diploma holders and other professional qualifications are employed.
9. Most of the companies have turnover in the range of Rs 1 Crore to 20 Crore.
10. Average exports for greater number of companies fall in the bracket of 25 lakh to 1 Crore ,10 to 25 lakh and 1 Crore to 20 Crore.
11. The constraints faced by Technology Start-ups in India in decreasing order of intensity include: Government Policies 17.02% (16/94), access to finance 15.96% (15/94), Marketing 13.83% (13/94), access to modern technology 10.64% (10/94), High cost of raw materials 9.57% (9/94), Infrastructure 9.57% (9/94) and others (support system, Human capital, Inexperience, Quality management, competition, Business strategy, Internal management). Thus government policies represent the greatest problem faced by start-ups in India.
12. The various problems in government policies are:- taxation 36.36% (8/22), Lengthy Procedures & formalities 27.27% (7/22), High Import duty, Excise

duty, Custom duty, Sales tax 18.18% (4/22), Stringent norms of Labour Laws 13.64% (3/22) and lack of awareness about government policies 4.55% (1/22).

13. The various problems in access to finance are: High Interest Rates 30.00% (6/20), Non Availability of Angel & VC's 25.00% (5/20), insufficient seed funding 20.00% (4/20), Lengthy procedures and formalities 15.00% (3/20) and Lack of Information 10.00% (2/20).

14. The various problems in marketing faced by technology start-ups are:- Lack of Information about new markets for expansion 70.59% (12/17) constitutes the major problem for start-ups followed by lack of access to government departments for business 17.65% (3/17), lack of access to media and publicity 5.88% (1/17) and reluctance of business community for business 5.88% (1/17).

15. The various problems related to technology are:- Non availability of Information about better and never technologies 35.29% (6/17), technology acquisition 23.53% (4/17), technology collaboration 17.65% (3/17), funding for development of newer technologies 17.65% (3/17) and procedural problems in technology upgradation 5.88% (1/17).

3.5 Aggregate characteristics of all start-up companies

3.5.1 Total no of responses received = 115

The information about the companies had been collected through direct interviews of companies from all over India.

3.5.2 Companies Incorporated between 1991-2006.

The period for consideration of the Start-ups in present study is one and half decade, starting from 1991 up to 2006

3.5.3 Ownership Pattern

If one looks into the ownership pattern of the 115 companies, then there are 3 companies in sole proprietorship, 77 of them are in partnership, 31 are private limited companies and there are 2 companies in Public limited. So, predominantly there is a preference for partnership mode of setting up business, or one may see it as an evolution of companies from partnership mode to private limited mode and finally to public limited option where the company can raise funds going to public, that is by issuing shares or debentures. However, since there are only two public limited in the sample, it may also imply that small promoters or entrepreneurs are not that much enthusiastic about transferring their rights over the companies they run, by transforming into public limited mode unless they attain a certain turnover level.

3.5.4 Educational & Professional Background of Promoter

If we look into the educational profile of the promoters of these 115 companies, then it is found that most of them are non technical graduates followed by technical graduates.

3.5.5 Source(s) of technology

If we look into the various sources of technology utilized by Start-ups, we find that majority of them are developing products through indigenous technology and own R&D, while second major source of technology is sourcing from partner. Only a few have technical tie-ups and collaborated with Indian and foreign labs some of them are using open sources for fulfilling their technological needs.

3.5.6 Technical tie-ups with R&D labs, universities or other agencies in India or abroad

9 Companies out of 115, have formal technical tie-up with R&D labs, universities or other agencies in India or abroad.

3.5.7 Initial Capital Investment

Most of the Start-ups have initial capital investment in the range of Rs 25 Lakhs to 1 Cr .

3.5.8 Type of Fund

The source of funding is mainly banks or financial institutional funding 41.58% (79/190) and self finance 40.53% (77/190) followed by private loan 10.53% (20/190). Only a few have utilized other sources of funding like venture capital, foreign investment and capital market. In other way we can say that other sources of funding are not readily accessible to Start-ups.

3.5.9 Average R&D Expenditure as % of turnover

The average expenditure on R&D against turnover of these 115 companies usually varies from 0-2 % and only in few cased beyond 2 %.

3.5.10 Average Annual Turnover in Last 3 Years

Average Annual Turnover for these 115 companies varies from Rs few lakhs to more than 1 Crore. As the turnover goes on increasing to upper range, number of companies in that range goes on increasing ,then after reaching turnover of 1 Cr, number of companies having turnover above 1Cr decreases.

3.5.11 Average Profit After Tax in Last 3 Years

Average profit after tax for these 115 companies varies from Rs few thousands to more than 1 Crore. As the profit after tax goes on increasing to upper limit, number of companies in that bracket goes on decreasing.

3.5.12 Average Exports in Last 3 Years

Average Exports for these 115 companies varies from Rs few thousands to more than Rs. 20 Crore Most of the companies fall in the bracket of few thousands to 5 lakh, followed by 25 lakh to 1 Crore and 10 lakh to 25 lakh.

3.5.13 Details of Work Force

Works force employed by the start-up companies mainly consists of technical people 54.53% (1386/2542) consisting of ITI certificate holders, diploma holders and other professional qualification followed by undergraduates[1] 24.19% (615/2542) and graduates[2] 16.68% (424/2542) with only a few post graduates and higher degree holders.

[1] Students who have completed secondary school, but have not completed another degree beyond the secondary school

[2] Students who have completed the equivalent of a bachelors degree (three-to-four years of school after secondary school) at an accredited college/University

3.5.14 Constraints

3.5.14.1 Overall Constraints

The constraints faced by Start-ups in India in decreasing order of intensity include: Government Policies 21.90% (97/443), access to finance 20.31% (90/443), Marketing 16.70% (74/443), Skilled labour 14.45% (64/443), access to modern technology 13.99% (62/443), High cost of raw materials 6.32% (28/443), Infrastructure 2.03% (9/443), support system 1.80% (8/443), Management issues 0.90% (4/443), Inexperience 0.45% (2/443), Quality management 0.45% (2/443), competition 0.23% (1/443) and Business strategy 0.23% (1/443). Thus government policies represent the greatest problem faced by start-ups in India.

3.5.14.2 Government Policies

Government policies constitute 21.90% (97/443) of overall constraints faced by Start-ups. Government policy is one of the major constraints faced by Start-ups. The various problems in government policies which are coming from the survey are:- Lengthy Procedures, formalities & extensive paper work 20.30% (108/532), High Import duty, Excise duty, Custom duty, Sales tax 19.55% (104/532), Stringent norms of Labour Laws 14.66% (78/532), Wrong interpretation of laws & policies of the govt. by the enforcement agencies 14.10% (75/532), Stringent Environment & Pollution control Norms 12.22% (65/532), Various Insurance Schemes 9.59% (51/532), Frequent Raids & Checking by Vigilance Teams 8.08% (43/532) and taxation 1.50% (8/532).

3.5.14.3 Funding

Accessibility to finance constitutes 20.31% (90/443) of overall constraints faced by the start-ups and has been recognized as the second major constraint for all start-ups which can seriously affect the ability of a Start-up to survive, increase capacity, upgrade its technology and even expand is markets, improve management or raise productivity .

The various problems in access to finance emerging from the study are : Lengthy time taking procedure 30.15% (60/199), High Interest Rates 27.64% (55/199), Reluctance of Funding Institutions/Banks 16.08% (32/199), Collateral Security

11.06% (22/199), Lack of Information 10.55% (21/199), Non Availability of Angel & VC's 2.51% (5/199) and Insufficient seed funding 2.01% (4/199).

3.5.14.4 Marketing

Lack of Information about new markets for expansion 67.86% (57/84) constitutes the major problem for start-ups followed by lack of access to media and publicity 15.48% (13/84) and reluctance of business community for business 13.09% (11/84).

3.5.14.5 Technology

Technology constitutes 13.99% (62/443) of overall constraints faced by Start-ups. Non availability of Information 40.00% (42/105) about better and never technologies constitutes the first major problem related to start-ups followed by non availability of required technology 27.61% (29/105), procedural problems in technology upgradation 22.86% (24/105), problems in technology acquisition 3.80% (4/105) and technology collaboration 2.86% (3/105).

To sum up :

1. Majority of companies are in partnerships 66.96% (77/115) where as 26.96% (31/115) are Private Ltd Co.
2. Most of the promoters are simple graduates 73.04% (84/115) followed by engineering graduates 19.13% (22/115), diploma & ITI certificate holders 3.48% (4/115) and only few have other professional qualifications.
3. As far as source of technology is concerned, majority of them are developing products through indigenous technology 42.39% (92/217) and own R&D 27.65% (60/217), while second major source of technology is sourcing from partner 21.66% (47/217).Only a few have collaborated with Indian and foreign labs.
4. Very few have tie-ups with either university or Technological labs.

5. Most of companies have initial capital investment in the bracket of 25 lakh to1 Crore.
6. The source of funding is mainly banks or financial institution 41.58% (79/190) and self finance 40.53% (77/190). Only a few have utilized other sources of funding.
7. Average expenditure on R&D against turnover usually varies from 1 to 2 % and in exceptional cased beyond 2 %.
8. Average Annual Turnover for these companies varies from Rs few thousands to more than 1 Crore. As the turnover goes on increasing to upper range, number of companies in that bracket goes on increasing and after reaching turnover of above 1 Cr, number of companies decrease.
9. Average Profit After Tax for these companies varies from Rs few thousands to more than 1 Crore.
10. Average Exports for these companies varies from Rs few thousands to more than Rs. 20 Crore Most of the companies fall in the bracket of few thousands to 5 lakh, followed by 25 lakh to 1 Crore and10 lakh to 25 lakh.
11. Works force employed by the start-up companies mainly consists of technical people 54.53% (1386/2542) consisting of ITI certificate holders, diploma holders and other professional qualification followed by undergraduates 24.19% (615/2542) and graduates 16.68% (424/2542) with only a few post graduates and higher degree holders.
12. The constraints faced by Start-ups in India in decreasing order of intensity include: Government Policies 21.90% (97/443), access to finance 20.31% (90/443), Marketing 16.70% (74/443), Skilled labour 14.45% (64/443), access to modern technology 13.99% (62/443), High cost of raw materials 6.32% (28/443), Infrastructure 2.03% (9/443) and others (support system, Management issues, Inexperience, Quality management, competition, Business strategy). Thus government policies represent the greatest problem faced by start-ups in India.
13. The various problems in government policies are:- Lengthy Procedures, formalities & extensive paper work 20.30% (108/532), High Import duty, Excise duty, Custom duty, Sales tax 19.55% (104/532), Stringent norms of Labour Laws 14.66% (78/532), Wrong interpretation of laws & policies of the govt. by the enforcement agencies 14.10% (75/532), Stringent

Environment & Pollution control Norms 12.22% (65/532), Various Insurance Schemes 9.59% (51/532), Frequent Raids & Checking by Vigilance Teams 8.08% (43/532) and taxation 1.50% (8/532).

14. The various problems in access to finance are: Lengthy time taking procedure 30.15% (60/199), High Interest Rates 27.64% (55/199), Reluctance of Funding Institutions/Banks 16.08% (32/199), Collateral Security 11.06% (22/199), Lack of Information 10.55% (21/199), Non Availability of Angel & VC's 2.51% (5/199) and insufficient seed funding 2.01% (4/199).
15. The various problems in marketing faced by start-ups are:- Lack of Information about new markets for expansion 67.86% (57/84) constitutes the major problem for start-ups followed by lack of access to media and publicity 15.48% (13/84) and reluctance of business community for business 13.09% (11/84).
16. It was found that technology constitutes 13.99% (62/443) of overall constraints faced by Start-ups. Non availability of Information 40.00% (42/105) about better and newer technologies constitutes the first major problem related to start-ups followed by non availability of required technology 27.61% (29/105), procedural problems in technology upgradation 22.86% (24/105) ,problems in technology acquisition 3.80% (4/105) and technology collaboration 2.86% (3/105).

Chapter 4

Findings & Recommendations

Chapter 4

Findings and Recommendations

The study has thrown light on the experiences and difficulties of the start-ups in India and their abilities for capacity building in India.

This chapter gives the analysis of the data generated from the survey as presented in the preceding chapter. The objective of discussing the findings from the data analysis is to establish if the findings are supportive to existing knowledge on the subject matter of the research study or provided a new knowledge as well as strategies that could help improve on support measures to Start-ups.

Majority of the firms studied were in manufacturing. Manufacturing firms, small or large are considered very critical to any economy in terms of value-addition, productivity, competitiveness and overall job creation. The contribution of Start-ups to the growth of manufacturing and the GDP of any country determines their strength and impact to the economy.

Some specific findings and recommendations arising from this study are made here.

4.1 Government Policy

Government policies constitute 21.90% (97/443) of overall constraints faced by Start-ups, i.e. government policy is one of the major constraints faced by Start-ups. The various problems in government policies are :- Lengthy Procedures & formalities , extensive paper work 20.30% (108/532), High Import duty, Excise duty, Custom duty, Sales tax 19.55% (104/532), Stringent norms of Labour Laws 14.66% (78/532), Wrong interpretation of laws & policies of the govt. by the enforcement agencies 14.10% (75/532), Stringent Environment & Pollution control Norms 12.22% (65/532) , Various Insurance Schemes 9.59% (51/532),

Frequent Raids & Checking by Vigilance Teams 8.08% (43/532) and taxation 1.50% (8/532).

Specific recommendations are made within the context of various issues:

(i) The business environment in which technology based start-ups operate should be reviewed and improved upon in terms of the regulatory and legal framework in order to encourage the growth and competitiveness of such start-ups. Adequate awareness creating mechanism needs to be strengthened.

(ii) The government should as a matter of urgency effect appropriate reforms in the customs as well as in the ports operations to reduce the number of agencies involved and make the clearing of goods more efficient, at least for time sensitive sectors. The awareness among the custom officials and the inspecting agencies, about the critical needs of technology based enterprises is desirable.

4.2 Funding

Accessibility to finance constitutes 20.31% (90/443) of overall constraints faced by the start-ups and has been recognized as the second major constraint for all start-ups which can seriously affect the ability of a Start-up to survive, increase capacity, upgrade its technology and even expand markets, improve management or raise productivity. Most financial assistance for Start-ups is offered as loans. However, lack of collateral, fear of excessive debt burdens and the low profitability for banks in lending to Start-ups impose definite limits on the levels of finance in the form of credit that Start-ups can expect to receive. Furthermore, it was found that Start-ups are undercapitalized and usually rely to a greater extent on loan capital or on retained earnings which are usually inadequate.

The various problems in access to finance are :- Lengthy time taking procedure 30.15% (60/199), High Interest Rates 27.64% (55/199), Reluctance of Funding Institutions/Banks 16.08% (32/199), Collateral Security 11.06% (22/199), Lack of Information 10.55% (21/199), Non Availability of Angel & VC's 2.51% (5/199) and Insufficient seed funding 2.01% (4/199).

Specific recommendations are made within the context of various issues:

(i) There is a strong need to promote appropriate support programmes that would offer training of staff of financial institutions to evaluate small borrowers quickly and monitor them in addition to training entrepreneurs to keep good financial records.

(ii) Long term loan facility should be provided to start-ups at a lower interest rate that is supportive to loan repayment and overall growth and competitiveness of the start-ups.

(iii) Lack of information on the operations of banks on the part of start-ups was identified as one of the factor hindering start-ups from accessing financial support services. Thus ,it is recommended, finance institutions should from time to time organize forums for start-ups where issues surrounding access to financial facilities are discussed. Financial institutions should endeavour to act as investment participants in giving credit facilities and should see to it that their investment yield the maximum result. Bankers should assist start-ups to receive bank loans, create institutional credit consciousness in start-ups and also help them to maintain proper account. All these require effective communication network for it to succeed to the mutual benefit of all stakeholders.

(iv) Government/other agencies must attempt to make pre-venture capital relatively easily available for entrepreneurs with a certain back ground and experience. The government should stimulate the development of Venture Capital Market for Start-ups through the provision of specific tax incentives for venture capitalists, and may have dedicated staff to address the

concerns of VCs and start-ups. It is recommended that government officials who have had experience with the start-up environment be involved as a point person for VCs and start-ups to direct their concerns and direct them to the proper guidance. Coordination among various funding agencies and developmental agencies giving grants or subsidies needs to be strengthened.

4.3 Marketing

Constraints in Marketing constitutes 16.70% (74/443) of overall constraints faced by Start-ups, a problem considered next to finance The various problems related to marketing are:- lack of information about new markets for expansion 67.86% (57/84), lack of access to media and publicity 15.48% (13/84), reluctance of business community for business 13.09% (11/84) and lack of access to government departments for business 3.57% (3/84).

Specific recommendations are made within the context of various issues:

(i) Start-ups need support programmes for displaying their products in fairs and exhibitions and to train them on management, especially in relation to marketing issues such as methods of costing and pricing and techniques of promotion and sales. Marketing support required include among others the following:

- market information and research
- trade statistics
- product promotion
- information procedures and regulations for export and
- information on international exhibitions and fairs.

The government should readily and freely assist start-ups to have access to necessary information relating to business opportunities, markets and services etc which would enable them to enter in new markets and expand their operations. For this to be feasible, effective and functional,

government should establish Business Information Centers (BICs) and Business Support Centers (BSCs) in partnership with States and Local Governments at every state capital and local government headquarters. The BSCs should offer advisory and mentoring services to entrepreneurs and provide them with information about new markets were they can expand their business or from where they can get their desired information by paying nominal amount of fees. The existing mechanisms may be reviewed and strengthened.

4.4 Technology

It is rather surprising that Technology constraints constitutes only 13.99% (62/443) of overall constraints faced by Start-ups, though it is one of the constraints faced by Start-ups. The choice of technology plays a critical role in determining the productivity and competitiveness of a firm. The start-ups are mostly based on existing technologies, in India while start-ups are mostly based on new technology in advanced countries. This is a serious issue.

The various problems related to technology are:- non availability of information 40.00% (42/105), non availability of required technology 27.61% (29/105), procedural problems in technology upgradation 22.86% (24/105), technology acquisition 3.80% (4/105), technology collaboration 2.86% (3/105) and funding for development of new technology 2.86% (3/105).

Specific recommendations are made within the context of various issues:

(i) There is a need to promote effective communication mechanism between start-ups and technology producers in order to create awareness of newer technology available and transfer of technology, and easier access to them.

(ii) The existing relationship between R&D institutions and start-ups need to be strengthened, as it is very weak. There is need to promote the establishment of start-ups coordinating units in the R&D institutions in

order to facilitate assistance to these firms. Also, the creation of frameworks for joint research projects that address Sectoral needs of startups such as technology support needs and technological information infrastructure is imperative.

(iii) There is a need to support technology acquisition and upgrading by start-ups through a number of recognized arrangements such as technical assistance agreement, “know-how” agreements, joint ventures and franchising. The understanding, application and use of patenting among start-ups should be encouraged and promoted.

(iv) Start-ups should be advised and guided in choosing suitable and economic technology. Such advice and guidance on both the choice of technology and the appropriate provider and the manner of implementation of agreement can be provided by private consultants or technical service providers at subsidized cost with the support of private sector organizations such as chamber of commerce and industry.

(v) There is need to promote the creation of integrated networks of start-ups. The new role of support services is to influence start-ups to help each other and work together. This network will be aimed at increased output and upgraded technology to produce through combined efforts, products that can compete locally and internationally. This demands that policy makers should aim at creating the enabling environment to move start-ups away from relying on their own limited capability towards cooperation within groupings in order to gain greater competitive strength. It equally calls for the promotion of industrial clusters which will encourage specialization and cooperation between firms of the cluster with a view to developing collective efficiencies. The functioning of S&T Parks and TBIs etc needs to be reviewed for more effective support to technology based start-ups. High level of trust and risk taking with entrepreneurs would encourage start-ups.

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Appendix I

COMPANY PROFILE WITH IMPORTANT STUDY PARAMETERS

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
Defence Equipments & Accessories												
1.	**Astra Microwave Products** Hyderabad	1991	Public Ltd Co.	Professionals			Rf & Microwave Solutions	23.50%	550	4000		111
2.	**Qmax Test Techologies Pvt Ltd** New Delhi	1993	Pvt Ltd Co.	Engg	No		PCB Tester	30%	110	6000		3600
3.	**Prolific Technologies** New Delhi	1993	Sole proprietor -ship	Engg			Tools		40	100		
4.	**Bright Bcernishings tools Pvt. Ltd.** Tamil Nadu	1994	Pvt Ltd Co.	Diploma	US Comp. want to collaborate		Burnishing Tools	1%	25	60		4
5.	**Gulati glass Industries Pvt. Ltd.** New Delhi	1995	Pvt Ltd Co.	Technical			Bullet Proof Glass			2000		40
6.	**Mikronix Gauges Pvt Ltd** Aurangabad	1997	Pvt Ltd Co.	Engg	No		Measuring Tools	8-10 %	27	200		20
7.	**G.W Precision Tools India Pvt. Ltd.** Bangalore	1998	Any Other MNC	Engg		70 Crore	Tools		60	1200		720
8.	**Servocontrols & Hydraulics(I) Pvt Ltd.** Belgaum	2001	Pvt Ltd Co.	Other			Servocontro ls		35	250		
9.	**Coolroc Technologies ltd** Hyderabad	2002	Public Ltd Co.	Engg	Ordinance factory, India	50 Lakh	Bullet Proof jacket	7.81%	56	320	3.2 Lakh	50
10.	**Givi Misure Pvt. Ltd** Bangalore	2002	Pvt Ltd Co.	Engg	Givi Misure, Italy	50 lakh	Digital Readout systems		16	100		50

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
11.	**Ultimate Tools** Mumbai	2003	Partnership	Engg			Tool bits		80			
12.	**Krishna International** New Delhi	2006	Partnership	Engg	Precision Tool R &D Lab		Precision Machine tools		50			
Plastic & Machinery Parts												
13.	**Premould** Hyderabad	1994	Partnership	Diploma		50,000	Mould Bases, Pillar Die sets	10%	75	150		
14.	**Rithvik Machines & Automation Systems Pvt. Ltd.** Hyderabad	1995	Pvt Ltd Co.	Engg		20 lakh	Moulding Machines, Hydraulic Power Systems	10%	25	100		No exports
15.	**Shri Gajanana Industries (I) Pvt. Ltd.** Mumbai	1997	Any Other	Engg		8 Cr	Plastic injection, Moulds & Dies	2%	130	450		67.5
16.	**Amritha Tool Crafts Pvt. Ltd.** Hyderabad	1997	Pvt Ltd Co.	Engg		20 lakh	Plastic injection Moulds & blow moulds	10%	60	290		20
17.	**Airtech Engineers** New Delhi	1998	Partnership	Engg	No	1 lakh	Condenser manufacturi ng	2%	60	500		
18.	**Jagmohan Pla-mech Pvt. Ltd.** Mumbai	1998	Pvt Ltd Co.	Engg	No	25 lakh	Moulding Machines	5%	50	883		529.8
19.	**Mohanlal Industries** Bassi Pathana	2002	Sole proprietor -ship	Diploma			Stitching Machines & Spares	10%	15	20		20
20.	**Eyyani Electric Machines Pvt. Ltd.** Bangalore	2004	Pvt Ltd Co.	Engg			Electric machines	21.43%	25	70		

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
21.	**Siddhi Pet** Mumbai	2005	Partnership	Technical			Stretch Blow Moulding Machine		3			
Auto Component												
22.	**Venkateswara Steels** Coimbatore (Tamilnadu)	1993	Partnership	Diploma		15 lakh	Mfg of Springs & Sheet metal parts for OEMs		200	430	11 Lakh	
23.	**Karan Automotives (P) Ltd.** Faridabad (Haryana)	1997	Pvt Ltd Co.	Other			Auto Component					
24.	**Marathwada Auto Compo Pvt. Ltd.** Aurangabad, (Maharashtra	1997	Pvt Ltd Co.	Professionals		1 Cr	Tubular, Fabricated, Plated, M/c compo nent	0.20%	115	5000		4.8
25.	**Kalpa Industries** Hardwar (Uttaranchal)	2005	Sole proprietor -ship	Other	No		Auto Compo-nent		12			
Electronics, Computer S/W & H/W												
26.	**Systemantics India Pvt Ltd**. Bangalore	1995	Pvt Ltd Co.	Engg	No	5 lakh	Products & Services in Robotics & Automation	10%	9			
27.	**Virtual Wire Technologies** New Delhi	2002	Pvt Ltd Co.	Engg	IIT,Delhi	20 lakh	Embedded system technologie s					
28.	**Mechartes Researchers** New Delhi	2003	Pvt Ltd Co.	Engg	IIT ,Delhi		Wireless & Communica tion technologie s	70%	13	15		No Exports

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
29.	**GRIDSOLVE** New Delhi	2004	Pvt Ltd Co.	Professionals			Software products & Services		9			
30.	**Elfsys Embedded Solutions Pvt. Ltd.** New Delhi	2004	Pvt Ltd Co.	Engg	Tie up with Macmet Technologies for development of Senser Nets	1.05 lakh	Projects based on wireless sensor networks		7	6		
31.	**SM Onyomo Infotech (P) Ltd.** New Delhi	2004	Pvt Ltd Co.	Engg		30 lakh	Computing, Multi-media solutions		7			
32.	**Afford Computing Solutions Pvt. Ltd.** Bangalore	2005	Pvt Ltd Co.	Engg	IIT ,Delhi	5 lakh	Mechanical Engg, CAE, Simulation and Analysis		4			
33.	**KritiKal solutions Pvt. Ltd.** New Delhi	2005	Pvt Ltd Co.	Engg	IIT ,Delhi	1 lakh	Internet based Service		8			
Dyes and Chemicals												
34.	**Mugat Dye-Chem** Bharuch. Gujarat	1991	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	10	25 Lakh -1 Cr	1-5 Lakh	0-5 Lakh
35.	**Shyam Chemicals** Bharuch. Gujarat	1991	Partnership	Graduate		25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
36.	**Sodar Industries** Bharuch. Gujarat	1991	Partnership	Graduate		25 Lakh-1Cr	Chemical	0-2 %	8	> 1 Cr	5-25 Lakh	
37.	**Suraj Dye-Chem** Bharuch. Gujarat	1991	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	12	25 Lakh -1 Cr	0-1 lakh	

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
38.	**Shital Chemical** Bharuch. Gujarat	1991	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	6	25 Lakh -1 Cr	25 Lakh -1 Cr	
39.	**Astik Dyestuff Pvt. Ltd.** Bharuch. Gujarat	1991	Pvt Ltd Co.	Graduate		25 Lakh-1Cr	Dyes	0-2 %	48	> 1 Cr	25 Lakh -1 Cr	25 Lakh -1 Cr
40.	**Sky & Skylark Industrial Prod** Bharuch. Gujarat	1991	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	9	> 1 Cr	5-25 Lakh	
41.	**Reacton Chemicals** Bharuch. Gujarat	1991	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
42.	**Vandana Chemicals** Bharuch. Gujarat	1991	Partnership	Graduate	No	25 Lakh-1Cr	Chemical			25 Lakh -1 Cr	1-5 Lakh	0-5 Lakh
43.	**Ravi Chem Industries** Bharuch. Gujarat	1991	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			> 1 Cr	1-5 Lakh	10-25 Lakh
44.	**Trimurti Chemicals** Bharuch. Gujarat	1991	Partnership	Graduate	No	25 Lakh-1Cr	Chemical			25 Lakh -1 Cr	0-1 lakh	
45.	**Kaiwlya Chemicals** Bharuch. Gujarat	1991	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
46.	**Shree Ram Dye - Chem Industries** Bharuch. Gujarat	1992	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	9	25 Lakh -1 Cr	1-5 Lakh	0-5 Lakh
47.	**Dynemic Products Ltd.** Bharuch. Gujarat	1992	Public Ltd Co.	Graduate	No	1 Cr- 5 Cr	Dyes	0-2 %	125	> 1 Cr	> 1 Cr	> 1 Cr
48.	**Shree Ganesh Dyes.** Bharuch. Gujarat	1992	Partnership	Graduate		25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
49.	**Shreerang Industrial Enterprises** Bharuch. Gujarat	1992	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	1-5 Lakh	

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
50.	**Mili Industries** Bharuch. Gujarat	1992	Partnership	Under graduate		25 Lakh-1Cr	Chemical	0-2 %	12	25 Lakh -1 Cr	1-5 Lakh	
51.	**Pioneer Chemicals** Bharuch. Gujarat	1992	Partnership	Graduate	No	25 Lakh-1Cr	Chemical					
52.	**Avdhoot Pigments P. Ltd.** Bharuch. Gujarat	1992	Pvt Ltd Co.	Graduate		25 Lakh-1Cr	Dyes			> 1 Cr	1-5 Lakh	0-5 Lakh
53.	**Sharda Industries** Bharuch. Gujarat	1992	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	16	25 Lakh -1 Cr	0-1 lakh	
54.	**Tejal Industries** Bharuch. Gujarat	1992	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
55.	**Delux Chemical Industries** Bharuch. Gujarat	1993	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	25 Lakh -1 Cr	0-5 Lakh
56.	**Kanchan Taru Chemicals** Bharuch. Gujarat	1993	Partnership	PG & Mgt Diploma		< 25 Lakh	Dyes		6	25 Lakh -1 Cr	1-5 Lakh	
57.	**Nucleophil Chemicals** Bharuch. Gujarat	1993	Partnership	Graduate		25 Lakh-1Cr	Chemical	0-2 %	9	25 Lakh -1 Cr	5-25 Lakh	
58.	**Adarsh Dye-Chem** Bharuch. Gujarat	1993	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
59.	**Nivika Chemo Pharma** Bharuch. Gujarat	1993	Partnership	Graduate		25 Lakh-1Cr	Chemical	0-2 %	15	25 Lakh -1 Cr	5-25 Lakh	
60.	**Deep Chem** Bharuch. Gujarat	1993	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			> 1 Cr	5-25 Lakh	25 Lakh -1 Cr
61.	**Suyog Dye Chemic Pvt. Ltd** Bharuch, Gujarat	1994	Pvt Ltd Co.	Graduate		25 Lakh-1Cr	Dyes			> 1 Cr	25 Lakh -1 Cr	> 1 Cr
62.	**Krishna Chemicals** Bharuch. Gujarat	1994	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	16	> 1 Cr	5-25 Lakh	10-25 Lakh

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
63.	**Devanshi Dyestuff** Bharuch. Gujarat	1994	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	33	25 Lakh -1 Cr	1-5 Lakh	25 Lakh -1 Cr
64.	**Shramik Chemicals** Bharuch. Gujarat	1994	Partnership	Graduate		< 25 Lakh	Dyes	0-2 %	7	25 Lakh -1 Cr	0-1 lakh	0-5 Lakh
65.	**Vishnu Chemicals** Bharuch. Gujarat	1994	Partnership	Graduate		25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
66.	**Mangal Murthi Chemicals** Bharuch. Gujarat	1995	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	10	25 Lakh -1 Cr	0-1 lakh	0-5 Lakh
67.	**Efflux Industries** Bharuch. Gujarat	1995	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	15	25 Lakh -1 Cr	1-5 Lakh	0-5 Lakh
68.	**Mayur Dye-Chem** Bharuch. Gujarat	1995	Partnership	Graduate		25 Lakh-1Cr	Chemical	0-2 %	17	25 Lakh -1 Cr	5-25 Lakh	
69.	**Jigar Industries** Bharuch. Gujarat	1995	Partnership	Graduate		25 Lakh-1Cr	Dyes			> 1 Cr	5-25 Lakh	25 Lakh -1 Cr
70.	**DVs Industries** Bharuch. Gujarat	1996	Partnership	Graduate		25 Lakh-1Cr	Chemical	0-2 %	12	25 Lakh -1 Cr	0-1 lakh	
71.	**Krishna Chemicals** Bharuch. Gujarat	1996	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	16	> 1 Cr	5-25 Lakh	25 Lakh -1 Cr
72.	**Jay Yogeshwar Chemical Ind.** Bharuch. Gujarat	1996	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	1-5 Lakh	
73.	**Camex Intermediates Ltd.** Bharuch. Gujarat	1997	Pvt Ltd Co.	Graduate	No	25 Lakh-1Cr	Dyes					
74.	**Pure Chem Pvt. Ltd** Bharuch. Gujarat	1997	Pvt Ltd Co.	Graduate	No	25 Lakh-1Cr	Chemical		60	> 1 Cr	5-25 Lakh	25 Lakh -1 Cr

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
75.	**Sonal Chemicals** Bharuch. Gujarat	1997	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	1-5 Lakh	
76.	**Prism Pigments & Colour P. Ltd.** Bharuch. Gujarat	1997	Pvt Ltd Co.	Engg	No	25 Lakh-1Cr	Dyes	4-6 %	66	> 1 Cr	5-25 Lakh	10-25 Lakh
77.	**Jayshree Industries** Bharuch. Gujarat	1998	Partnership	Graduate		25 Lakh-1Cr	Perfume	2-4 %	16	> 1 Cr	25 Lakh -1 Cr	10-25 Lakh
78.	**Samip Chemical Pvt. Ltd.** Bharuch. Gujarat	1998	Pvt Ltd Co.	Graduate		25 Lakh-1Cr	Dyes	0-2 %	9	25 Lakh -1 Cr	25 Lakh -1 Cr	
79.	**Rewa Chemicals** Bharuch. Gujarat	1998	Partnership	Graduate		25 Lakh-1Cr	Dyes	0-2 %	14	25 Lakh -1 Cr	1-5 Lakh	
80.	**Sunit Dyechem Industries** Bharuch. Gujarat	1998	Partnership	Graduate		25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	5-25 Lakh	
81.	**Shree Tripura Enterprise**	1998	Partnership	Graduate		25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
82.	**Mahadev Industries** Bharuch. Gujarat	1998	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
83.	**Amar Chemical Industries** Bharuch. Gujarat	1998	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
84.	**Sayan Gelenochem P. Ltd.** Bharuch. Gujarat	1998	Pvt Ltd Co.	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	10-25 Lakh
85.	**Prayana Chemical Industries** Bharuch. Gujarat	1999	Partnership	Graduate	No	25 Lakh-1Cr	Dyes		10	> 1 Cr	1-5 Lakh	0-5 Lakh
86.	**Kanchan -taru Chemicals** Bharuch. Gujarat	1999	Partnership	Graduate		25 Lakh-1Cr	Chemical			25 Lakh -1 Cr	1-5 Lakh	

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
87.	**Raviraj Chemicals** Bharuch. Gujarat	2001	Partnership	Graduate	No	25 Lakh-1Cr	Chemical			25 Lakh -1 Cr	0-1 lakh	
88.	**Sharddha Chemicals** Bharuch. Gujarat	2001	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	5-25 Lakh	
89.	**Om Shanti Industries** Bharuch. Gujarat	2002	Partnership	Graduate		25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	
90.	**Devam Alum Industries** Bharuch. Gujarat	2003	Partnership	Graduate		25 Lakh-1Cr	Chemical			25 Lakh -1 Cr	0-1 lakh	0-5 Lakh
91.	**Saurashtra Dyes & Chenicals** Bharuch. Gujarat	2003	Partnership	Graduate	No	25 Lakh-1Cr	Dyes			25 Lakh -1 Cr	0-1 lakh	0-5 Lakh
92.	**Raghuvir Chemicals** Bharuch. Gujarat	2004	Partnership	Graduate		25 Lakh-1Cr	Chemical					
93.	**Varniraj Chemicals** Bharuch. Gujarat	2004	Partnership	Graduate	No	25 Lakh-1Cr	Dyes					
Drugs and Pharmaceutical Intermediates												
94.	**Ashok Pharma Chem** Bharuch. Gujarat	1991	Partnership	Graduate	No	25 Lakh-1Cr	Pharma			> 1 Cr	> 1 Cr	> 1 Cr
95.	**Glindia Chemicals** Bharuch. Gujarat	1992	Partnership	Graduate	No	< 25 Lakh	Pharma		12	> 1 Cr	0-1 lakh	
96.	**Preeten Laboratories** Bharuch. Gujarat	1992	Partnership	Graduate	No	25 Lakh-1Cr	Pharma			> 1 Cr	5-25 Lakh	10-25 Lakh
97.	**Ronak Chemicals** Bharuch. Gujarat	1995	Partnership	Graduate	No	25 Lakh-1Cr	Pharma	0-2 %		25 Lakh -1 Cr		5-10 Lakh
98.	**Mass Pharma Pvt. Ltd.** Bharuch. Gujarat	1998	Partnership	Graduate	No	25 Lakh-1Cr	Pharma					

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
99.	**Siddarth Interchem P. Ltd** Bharuch. Gujarat	2000	Partnership	Graduate		25 Lakh-1Cr	Pharma					
100.	**Surya Organics & Chemicals** Bharuch. Gujarat	2001	Partnership	Graduate	No	25 Lakh-1Cr	Pharma			25 Lakh -1 Cr	1-5 Lakh	5-10 Lakh
101.	**Kenny Pharma P. Ltd** Bharuch. Gujarat	2002	Pvt Ltd Co.	Graduate		25 Lakh-1Cr	Pharma			25 Lakh -1 Cr	0-1 lakh	0-5 Lakh
102.	**Abhayraj Pharma Pvt. Ltd.** Bharuch. Gujarat	2003	Pvt Ltd Co.	Graduate	No	25 Lakh-1Cr	Pharma					
103.	**Apex Laboratories** Bharuch. Gujarat	2004	Partnership	Graduate		25 Lakh-1Cr	Pharma			> 1 Cr	1-5 Lakh	
104.	**Dolphin Chem** Bharuch. Gujarat	2005	Partnership	Graduate	No	25 Lakh-1Cr	Pharma					
Others												
105.	**Fibro-Chem Industries** Bharuch. Gujarat	1991	Partnership	Graduate	No	25 Lakh-1Cr	Mfg.					
106.	**Shreeji Engineering Enterp.** Bharuch. Gujarat	1994	Partnership	Graduate	No	25 Lakh-1Cr	Engg. Product			25 Lakh -1 Cr	0-1 lakh	
107.	**Jay Polypack** Bharuch. Gujarat	1994	Partnership	Graduate		25 Lakh-1Cr	Plastic Mfg.	0-2 %	8	25 Lakh -1 Cr	0-1 lakh	
108.	**Akar Printers** Bharuch. Gujarat	1996	Partnership	Graduate		25 Lakh-1Cr	Printing press	0-2 %	26	25 Lakh -1 Cr	1-5 Lakh	
109.	**Golden Ice Factory** Bharuch. Gujarat	1996	Partnership	Graduate	No	25 Lakh-1Cr	Ice Mfg.	0-2 %		0-5 Lakh	0-1 lakh	
110.	**Arbuda Ice Factory** Bharuch. Gujarat	1997	Partnership	Graduate	No	25 Lakh-1Cr	Ice Mfg.			25 Lakh -1 Cr	0-1 lakh	

Sl. No	*Company/ Organization*	*Date of incorpo -ration*	*Ownership Pattern*	*Background of Promoter*	*Technical tie-up with R&D Lab*	*Initial Capital Investment*	*Areas of Operations*	*R&D Related Expenditure*	*Human Capital*	*Average Annual Turnover*	*Average Profit after tax*	*Average Exports*
						In Rs				*In Lakhs*		*In Lakhs*
111.	**Start Technology** Bharuch. Gujarat	1997	Partnership	Graduate	No	25 Lakh-1Cr	IT	0-2 %	12			
112.	**Welmech Engineering Service** Bharuch. Gujarat	1998	Partnership	Graduate	No	25 Lakh-1Cr	Engg. Product		15	> 1 Cr	1-5 Lakh	
113.	**Mansi Engineering Works** Bharuch. Gujarat	1998	Partnership	Graduate	No	25 Lakh-1Cr	Mfg.			10-25 lakh	0-1 lakh	
114.	**Umiya Fabraicators** Bharuch. Gujarat	1998	Partnership	Graduate	No	25 Lakh-1Cr	Engg.			25 Lakh -1 Cr	0-1 lakh	
115.	**Perfect Ice & Coldstorage** Bharuch. Gujarat	1999	Partnership	Graduate	No	25 Lakh-1Cr	Ice Mfg.	0-2 %	9	25 Lakh -1 Cr	1-5 Lakh	

Note: * Most of the companies are utilizing banks , financial institutions and self finance as the major source of funding and only few have used other modes of funding like Venture capital, Capital market and Foreign investment.

** Most of the companies are developing products through indigenous technology and own R& D, while second major source of technology is sourcing from partner and only a few have technical tie-ups with Indian or foreign labs.

Appendix II

APPENDIX-II

Comparison between the Traditional Vs Technology Start-ups

<table>
<tr><th>Parameter</th><th>Traditional Sector</th><th>Technology sectors</th></tr>
<tr><td>1. Ownership Pattern</td><td>
<table>
<tr><th></th><th></th><th>%</th></tr>
<tr><td>1</td><td>Sole Prop.</td><td>nil</td></tr>
<tr><td>2</td><td>Partnership</td><td>86.59%</td></tr>
<tr><td>3</td><td>Pvt Ltd Co.</td><td>13.41%</td></tr>
<tr><td>4</td><td>Public Ltd Co.</td><td>nil</td></tr>
</table>
</td><td>
<table>
<tr><th></th><th></th><th>%</th></tr>
<tr><td>1</td><td>Sole Prop.</td><td>9.09 %</td></tr>
<tr><td>2</td><td>Partnership</td><td>18.18 %</td></tr>
<tr><td>3</td><td>Pvt Ltd Co.</td><td>60.61 %</td></tr>
<tr><td>4</td><td>Public Ltd Co.</td><td>6.06%</td></tr>
<tr><td>5</td><td>Any Other</td><td>6.06 %</td></tr>
</table>
</td></tr>
<tr><td></td><td>In traditional start-ups there is a preference for partnership mode of setting up business.</td><td>In technology start-ups there is a preference for Private Ltd Co. mode of setting up business.</td></tr>
<tr><td>2. Educational & Professional Background of Promoter</td><td>
<table>
<tr><td>1</td><td>Undergraduate</td><td></td></tr>
<tr><td></td><td>Technical</td><td></td></tr>
<tr><td></td><td>Non Technical</td><td>1.22%</td></tr>
<tr><td>2</td><td>Graduate</td><td></td></tr>
<tr><td></td><td>Technical</td><td>1.22 %</td></tr>
<tr><td></td><td>Non Technical</td><td>96.34 %</td></tr>
<tr><td>3</td><td>Post Graduate</td><td></td></tr>
<tr><td></td><td>Technical</td><td>1.22 %</td></tr>
<tr><td></td><td>Non Technical</td><td></td></tr>
</table>
</td><td>
<table>
<tr><td>1</td><td>Undergraduate</td><td></td></tr>
<tr><td></td><td>Technical</td><td>12.12 %</td></tr>
<tr><td></td><td>Non Technical</td><td></td></tr>
<tr><td>2</td><td>Graduate</td><td></td></tr>
<tr><td></td><td>Technical</td><td>63.64 %</td></tr>
<tr><td></td><td>Non Technical</td><td>15.15%</td></tr>
<tr><td>3</td><td>Post Graduate</td><td></td></tr>
<tr><td></td><td>Technical</td><td>9.09 %</td></tr>
<tr><td></td><td>Non Technical</td><td></td></tr>
</table>
</td></tr>
<tr><td></td><td>Most of the promoters in the traditional start-ups are simple graduates.</td><td>Most of the promoters in the technology start-ups are engineering graduates.</td></tr>
</table>

3. Source(s) of technology

	Indigenous /traditional	Own R&D	Collab with Indian lab	Collab with Foreign lab	Buying technology	Sourcing from Partner /parent company	Open source	No Response
Dyes & Chemical	48	43	2	nil	4	34	2	3
Drugs & Pharma	11	10	nil	1	nil	8	1	nil
Other	10	7	nil	nil	nil	4	nil	1
Total	69	60	2	1	4	44	3	4

Majority of traditional start-ups are developing products through indigenous technology and own R&D, while second major source of technology is sourcing from partner. only a few have collaborated with Indian labs

	Self/ Indigenous	Sourcing from partner / parent company	Open source	Technical tie-ups	Buying technology	No Response	Total
Defence Equipments & Accessories	8	2	nil	1	nil	2	13
Plastic & Machinery Parts	7	nil	3	1	1	nil	12
Auto Component	2	nil	nil	nil	nil	2	4
Electronics, Computer S/w.& H/w	6	1	1	nil	1	2	11
Total	23	3	4	2	2	6	40

Majority of technology start-ups are developing products through indigenous technology, while 2 of them have technical tie-up.

4. Technical tie-ups in India or Abroad

	No Response	Yes	No
Dyes & Chemicals	35	nil	25
Drugs & Pharma	3	nil	8
Other	2	nil	9
Total	40	nil	42

Non of traditional start-up has technical tie-up in India or abroad.

	Yes	No	No Response	Total
Defence Equipments & Accessories	4	2	6	12
Plastic & Machinery Parts	nil	2	7	9
Auto Component	nil	1	3	4
Electronics, Computer soft.& Hardware	5	1	2	8
Total	9	6	18	33

9 Companies have formal technical tie-up with R&D labs, universities or other agencies in India or abroad. In order to be both competitive locally and globally the newer companies are leaving no stone unturned to conform to international product standard.

5. Initial Capital Investment

		< 25 Lakhs	25Lacks-1 Cr	1-5 Cr
1	Dyes & Chemicals	2	57	1
2	Drugs & Pharma	1	10	nil
3	Others	nil	11	nil
Total		3	78	1

Most of the traditional start-ups have invested in the range of Rs 25 lakh to 1 cr.

		< 25 Lakhs	25Lacks -1 Cr	> 1 Cr	No Response	Total
1	Defence Equipments & Accessories	nil	2	1	9	12
2	Plastic & Machinery Parts	4	1	1	3	9
3	Auto Component	1	1	nil	2	4
4	Electronics, Computer soft.& Hardware	5	1	nil	2	8
Total		10	5	2	16	33

Most of the Start-ups in this sector have invested in the range of Rs 1 lakh to 25 lakh.

6. Funding

1	Self-finance	43.44%
2	Bank / other financial institution	40.69%
3	Venture capital	0.69%
4	Capital market	1.38%
5	Foreign investment / collaboration	nil
6	Private loan	13.79%

Most preferred source of funding is self-finance.

1	Self-finance	31.11%
2	Bank / other financial institution	44.44%
3	Venture capital	8.89%
4	Capital market	2.22%
5	Foreign investment / collaboration	8.89%
6	Any other source	4.44%

Most preferred source of funding is bank loans.

7. Areas of Operation/ Product/Services

1	Dyes & Chemicals	60	(a)	Chemicals	14
			(b)	Dyes	45
			(c)	Perfume	1
2	Drugs & Pharma	11	(a)	Drugs	4
			(b)	Pharma	7
3	Others	11			

1	Auto Components	4
2	Plastic & Machinery parts	9
3	Defence Equipments & Accessories	12
4	Electronics, Robotics, Computer & IT	8

8. Average R&D Expenditure as % of turnover

	No Response	0-2	2-4	4-6	6-8	8-10	10-12	> 12
Dyes & Chemicals	36	22	1	1	nil	nil	nil	nil
Drugs & Pharma	10	1	nil	nil	nil	nil	nil	nil
Other	6	5	nil	nil	nil	nil	nil	nil
Total	52	28	1	1	nil	nil	nil	nil

Expenditure on R&D mostly varies from 0-2 per cent of respective turnovers and in exceptional cases beyond 2 %.

	No Response	0-2	2-4	4-6	6-8	8-10	10-25	> 25	Total
Defence Equipments & Accessories	7	1	nil	nil	1	1	1	1	12
Plastic & Machinery Parts	1	2	nil	1	nil	4	1	nil	9
Auto Component	3	1	nil	nil	nil	nil	nil	nil	4
Electronics, Computer S/W & H/W	6	nil	nil	nil	nil	1	nil	1	8
Total	17	4	nil	1	1	6	2	2	33

Expenditure on R&D varies from 0-2 per cent to upto 25 per cent of respective turnovers and a major group is spending in range of 8-10 %.

9. Average Annual Turnover in Last 3 Years

		No Response	0-1 Lakhs	1-5 Lakhs	5-25 Lakhs	25 Lakhs-1 Cr	>1 Cr
1	Dyes & Chemicals	4	nil	nil	nil	41	15
2	Drugs & Pharma	4	nil	nil	nil	3	4
3	Others.	2	1	nil	1	6	1
	Total	10	1	nil	1	50	20

Most of the traditional start-ups have turnover in the range of Rs 25 lakhs to Rs. 1 Crore

		No Response	5-10 Lakhs	10-25 Lakhs	25 Lakhs -1 Cr	>1 Cr -20 Cr	> 20 Cr	Total
1	Defence Equipments & Accessories	2	nil	nil	3	5	2	12
2	Plastic & Machinery Parts	1	nil	1	2	5	nil	9
3	Auto Component	2	nil	nil	nil	1	1	4
4	Electronics, Computer S/W & H/W	6	1	1	nil	nil	nil	8
	Total	11	1	2	5	11	3	33

Most of the technology start-ups have turnover in the range of Rs 1 Crore. to 20 Crore.

10. Average Profit After Tax in Last 3 Years

		No Response	0-1 Lakhs	1-5 Lakhs	5-25 Lakhs	25 Lakhs -1 Cr	>1 Cr
1	Dyes & Chemicals	4	21	15	13	6	1
2	Drugs & Pharma	5	2	2	1	nil	1
3	Others.	2	6	3	nil	nil	nil
	Total	11	29	20	14	6	2

Most of the traditional start-ups have average profit after tax in the bracket of Rs few thousands to Rs. 5 Lakhs.

	No Response	5-10 Lakhs	10-25 Lakhs
All Companies	31	1	1

Most of the respondent did not respond except 2 Companies, which have average profit after tax in the range of 5-10 lakh and 10-25 lakh.

11. Average Exports in Last 3 Years

		No Response	0-5 Lakhs	5-10 Lakhs	10-25 Lakhs	25 Lakhs -1 Cr	>1 Cr
1	Dyes & Chemicals	11	36	nil	5	6	2
2	Drugs & Pharma	1	6	2	1	nil	1
3	Others.	2	9	nil	nil	nil	nil
Total		14	51	2	6	6	3

		No Response	0-5 Lakhs	10-25 Lakhs	25 Lakhs -1 Cr	>1 Cr - 20 Cr	> 20 Cr	Total
1	Defence Equipments & Accessories	4	1	1	3	2	1	12
2	Plastic & Machinery Parts	5	nil	2	1	1	nil	9
3	Auto Component	3	1	nil	nil	nil	nil	4
4	Electronics, Computer S/W & H/W	8	nil	nil	nil	nil	nil	8
Total		20	2	3	4	3	1	33

Most of the traditional start-ups have average exports in the bracket of Rs few thousands to Rs. 5 Lakhs.

Average exports for greater number of companies fall in the bracket of 25 lakh to 1 Crore ,10 to 25 lakh and 1 Crore to 20 Crore.

12. Details of Work Force

		General				Professional		No Response	Total
		UG	G	PG	Doc.	Technical	Any Other		
1	Dyes & Chemicals	261	65	13	2	6	237	33/60	584
2	Drugs & Pharma	10	2	nil	nil	nil	nil	10/11	12
3	Others	27	7	nil	nil	3	33	6/11	70
Total		298	74	13	2	9	270	49/82	666

		General				Professional		No Response	Total
		UG	G	PG	Doc	Technical	Any Other		
1	Defence Equipments & Accessories	109	231	69	6	363	271	1/12	1049
2	Plastic & Machinery Parts	nil	30	nil	nil	260	153	nil	443
3	Auto Component	200	62	11	1	4	49	1/4	327
4	Electronics, Computer S/W & H/W	8	27	13	2	4	3	1/8	57
Total		317	350	93	9	631	476	3/33	1876

<table>
<tr><td></td><td>Traditional start-ups are employing undergraduate in large numbers as compared to other categories.</td><td>Technology start-ups are employing large number of technical people.</td></tr>
<tr><td>13.0 Constraints faced</td><td>
<table>
<tr><td>1</td><td>Government Policies</td><td>28.38%</td></tr>
<tr><td>2</td><td>Funds / Credit availability</td><td>22.99%</td></tr>
<tr><td>3</td><td>Skilled labour</td><td>13.66%</td></tr>
<tr><td>4</td><td>Technology</td><td>12.08%</td></tr>
<tr><td>5</td><td>Marketing Strategy</td><td>11.65%</td></tr>
<tr><td>6</td><td>Market Information</td><td>5.74%</td></tr>
<tr><td>7</td><td>High cost of Raw materials</td><td>4.19%</td></tr>
<tr><td>8</td><td>Management issues</td><td>0.70%</td></tr>
<tr><td>9</td><td>Others</td><td>0.61%</td></tr>
</table>
</td><td>
<table>
<tr><td>1</td><td>Government Policies</td><td>17.02%</td></tr>
<tr><td>2</td><td>Funds / Credit availability</td><td>15.96%</td></tr>
<tr><td>3</td><td>Marketing</td><td>13.83%</td></tr>
<tr><td>4</td><td>Technology</td><td>10.64%</td></tr>
<tr><td>5</td><td>Raw Material</td><td>9.57%</td></tr>
<tr><td>6</td><td>Infrastructure</td><td>9.57%</td></tr>
<tr><td>7</td><td>Support System</td><td>8.51%</td></tr>
<tr><td>8</td><td>Human Capital</td><td>6.38%</td></tr>
<tr><td>9</td><td>Inexperience</td><td>2.13%</td></tr>
<tr><td>10</td><td>Quality Management</td><td>2.13%</td></tr>
<tr><td>11</td><td>Competition</td><td>1.06%</td></tr>
<tr><td>12</td><td>Business strategy</td><td>1.06%</td></tr>
<tr><td>13</td><td>Internal management</td><td>1.06%</td></tr>
<tr><td>14</td><td>Others</td><td>1.06%</td></tr>
</table>
</td></tr>
<tr><td></td><td>Accessibility to finance constitutes 22.99% of overall constraints faced by the traditional start-ups after government policies and has been recognized as the second major constraint for these companies. Third major constraint faced by traditional start-ups is lack of skilled labour 13.66%, followed by technology 12.08% and marketing strategy 11.65%.</td><td>Accessibility to finance 15.96% is recognized as second major constraint faced by technology start-ups followed by Marketing 13.83% and technology 10.96%.</td></tr>
</table>

13.1 Government Policies

Government Policies		
1	Stringent Environment & Pollution control Norms	21.47 %
2	Lengthy Procedures & formalities, extensive paper work	17.95 %
3	Wrong interpretation of laws & policies of the govt. by the Enforcement agencies	13.22 %
4	Stringent norms of Labour Laws	13.20 %
5	Present Import Policy	12.68 %
6	Various Insurance Schemes	8.98 %
7	Frequent Raids & Checking by Vigilance Teams	7.57 %
8	Central Excise & Customs	4.93 %

Government Policies		
1	Taxation	36.36%
2	Lengthy Procedures & formalities	27.27%
3	High Import duty, Excise duty, Custom duty, Sales tax	18.18%
4	Labour Laws	13.64%
5	Awareness about Govt. Policies	4.55%

Stringent environment & pollution control norms 21.47% is the first major contraints for traditional start-ups,third major constraint faced by these companies is wrong interpretation of laws & policies of the govt. by the enforcement agencies 13.22% leading to unnecessary harassment ,while present import policy is fifth major constraint.

In technogy start-ups taxation 36.36% is first major constraint , High Import duty, Excise duty, Custom duty, Sales tax 18.18% constitutes third major constraint for these start-ups.

13.2 Funding

Funding		
1	Lengthy time taking procedure	25.90%
2	High Interest Rates	22.27%
3	Lack of Government Support	18.64%
4	Reluctance of Funding Institutions/Banks	14.55%
5	Collateral Security	10.00%
6	Lack of Information	8.64%

Funding		
1	High Interest Rates	30.00%
2	Non Availability of Angel & VC's	25.00%
3	Insufficient seed funding	20.00%
4	Lengthy Procedures & formalities	15.00%
5	Lack of information	10.00%

Lengthy time taking procedure is reported as the leading constraint for traditional start-ups followed by high interest rates.

High interest rates are reported as the leading constraint for technology start-ups, followed by non availability of Angel & VC's and insufficient seed funding.

13.3 Marketing

Marketing		
1	Lack of Information about new markets for expansion	67.16 %
2	Lack of access to media and Publicity	17.91 %
3	Reluctance of business community for business	14.93 %

Lack of Information about new markets for expansion 67.16% constitutes the major problem for traditional start-ups.

Marketing		
1	Lack of Information about new markets for expansion	70.59%
2	Lack of access to government departments	17.65%
3	Lack of access to media and Publicity	5.88%
4	Reluctance of business community for business	5.88%

Lack of Information about new markets for expansion 70.59% constitutes the major problem for technology start-ups.

13.4 Technology

Technology		
1	Non availability of Information	40.45%
2	Non availability of Required Technology	32.58%
3	Procedural Problems	26.97%

Non availability of Information 40.45% constitutes the first major problem for traditional start-ups followed by non availability of required technology and procedural problems in technological change.

Technology		
1	Non availability of Information	35.29 %
2	Technology Acquisition	23.53 %
3	Technology Collaboration	17.65 %
4	Funding for development of New Technology	17.65 %
5	Technology Upgradation	5.88 %

Non availability of Information 35.29% constitutes the first major problem for technology start-ups followed by problems in technology acquisition 23.53% and technology collaboration 17.65%.

Appendix III

APPENDIX-III (QUESTIONNAIRE-I)

"TECHNOLOGY BASED START-UP COMPANIES"

1. Basic details:

Name of the company: **Contact Person:**	**Address:**
E-mail:	**Tel. No. / Fax:**

2. Date of incorporation:

3(a). Ownership pattern (please tick):

(i) Sole proprietorship (ii) Partnership (iii) Private limited company

(iv) Public limited company (v) Any other (please specify)

3(b). Background of the promoter:

4. Initial capital investment:

5. Type and year of funding (please tick and mention the year):

(a) Self-finance (b) Bank / other financial institution (c) Venture capital

(d) Capital market (e) Foreign investment / collaboration (e) Any other source

6. Objectives and areas of operations (products / processes, services etc.):

7. Aim and vision of the company:

8. Basic details of foreign collaboration (if any):	9. Annual turnover upto last 3 years or as applicable:
10. Profit after tax upto last 3 years or as applicable:	11. Exports (if any) upto last 3 years or as applicable:

12. How do you describe the level of technology employed in the production process? (please tick)

(a) contemporary to national standards (b) lower than national standard

(c) higher than national standards but lower than international standards

(d) contemporary to international standards

13. Source(s) of technology:	14. R&D and related expenditures (including technology transfer, know-how fee, royalty etc.):
15. Technical tie-ups (if any) with R&D labs, universities or other agencies in India or abroad:	

16. Human capital:

Qualification	**No. of employees**
Undergraduate	
Graduate	
Post-graduate	
Doctorate	
Technical	
Any other	
Total	

17. Highlights of experiences, performance and achievements since inception:

18. Constraints faced:

19. State whether in your perception, your company has:
(a) survived successfully (b) still evolving (c) is struggling or has been bound up
Please also state the reasons for your assessment.

20. Suggestions for improving the rate of survival of technology based start-up companies (including technology, funding and management issues of the company, government policy and any other issues):

Appendix IV

APPENDIX-IV (QUESTIONNAIRE-II)

"TRADITIONAL START-UP COMPANIES"

1. Basic details:

Name of the company: Contact Person:	Address:
E-mail:	Tel. No. / Fax:

2. Date of incorporation:

3. Product / Services:

4. (a) Ownership pattern (please tick):

(i) Sole proprietorship (ii) Partnership (iii) Private limited company

(iv) Public limited company (v) Any other (please specify)

4. (b) Details of technical or other collaboration (if any):

4. (c) Educational and professional background of the promoter:

(i) Undergraduate (ii) Graduate (iii) Engineering

(iv) Other professional (v) Any other ……..

5. Aim of starting business (in case of more than one, please give ranking while ticking):

(a) Employment / Income (b) Short term profit maximization

(c) High rate of return on capital (d) High Sales (e) Be market leader

(f) Export (g) Be global player

6. Investment in plant and machinery (in Rs.): (please tick)

(i) Less than 25 Lakh (ii) 25 Lakh to 1 Crore (iii) 1 Crore to 5 Crore

(iv) 5 Crore to 10 Crore (iv) More than 10 Crore

7. Constraints faced: (please tick and in case of more than one rank them accordingly)

(i) Fund / Credit

(ii) Market information

(iii) Marketing / Business strategy

(iv) Technology

(v) Government policy

(vi) Absence of skilled labour

(vii) Internal management issues

(viii) Input cost and availability

(ix) Any other (please specify) ……..

8. Elaborate (if required) about each of the constraints faced:…….....

……
……

9. Type and year of funding (please tick and mention the year of funding):

(a) Self-finance (b) Bank / other financial institution (c) Venture capital

(d) Capital market (e) Foreign investment / collaboration (f) Private loan

(g) Any other source ……..

10. Mention the year(s) of funding: ……..

11. (a) Are there difficulties in acquiring fund? (please tick) (1) Yes (2) No

11. (b) If yes, then mention the difficulties: (please tick and in case of more than one rank 1-6 according to priorities)

(i) Lack of information (ii) High interest rate

(iii) Lengthy time-taking procedure (iv) Lack of collateral

(v) Lack of government support (vi) Reluctance of funding institutions / banks

(vi) Any other ……..

11. (c) Is the company finding it difficult to perform any of the following operations due to lack of funds? (please tick and in case of more than one rank 1-5 according to prioroties)

(i) To survive in industry (ii) To acquire better machines / equipments / technology

(iii) To expand operations (iv) To employ more / better skilled workers

(v) To export

(vi) Any other (please specify) …….

11. (d) Suggestions for improvement in credit / fund availability:

12. Product and market information:

(a) Which market your product sales mainly cater to? (1) Domestic (2) International export	(b) In recent years, did market demand (domestic or international) affect your sales? (1) Yes (2) No
(c) If market demand affected your sales, then how did you adjust – please mention briefly.	
(d) What will be your concrete policy suggestions to government in such case of demand mismatch?	
(e) Do you feel that your company is producing at full existing capacity? If "no" then please mention the factors restricting you from full capacity utilization, or the reasons for supply bottlenecks.	

13. Basic financial details:

(a) Average annual turnover in last 3 years or as applicable (in Rs.): (please tick) (i) 0 – 5 Lakh (ii) 5 – 10 Lakh (iii) 10 – 25 Lakh (iv) 25 Lakh – 1 Cr. (v) more than 1 Cr	(b) Average profit after tax in last 3 years or as applicable (in Rs.): (please tick) (i) 0 – 1 Lakh (ii) 1 – 5 Lakh (iii) 5 – 25 Lakh (iv) 25 Lakh – 1 Cr. (v) more than 1 Cr.
(c) Average cost of production in last 3 years or as applicable (in Rs.): (please tick) (i) 0 – 5 Lakh (ii) 5 – 10 Lakh (iii) 10 – 25 Lakh (iv) 25 Lakh – 1 Cr. (v) more than 1 Cr	(d) Average exports (if any) in last 3 years or as applicable (in Rs.): (please tick) (i) 0 – 5 Lakh (ii) 5 – 10 Lakh (iii) 10 – 25 Lakh (iv) 25 Lakh – 1 Cr. (v) more than 1 Cr

14. (a) After incorporation, have you changed your machines or technology of production?

(a) Yes (b) No

14. (b) If yes, then what is the reason for implementing such a change? (please tick and rank accordingly in case of more than one)

(i) To increase output (ii) To become cost-effective (increase profit)

(iii) To be competitive in existing market (iv) To explore other markets

(v) To export (vi) Any other ……..

14. (c) Which year(s) did the company make such technological change?

14. (d) What are the constraints the company faces to implement a technical change? (please tick and rank accordingly)

(i) Lack of fund (ii) Non-availability of required technology

(ii) Lack of information (iii) Procedural problems

(iv) Any other (please specify) ……..

15. (a) Are there any standard / certification relevant for your product? (i) Yes (ii) No

15. (b) If yes, please list the relevant standards for your products:…….

15. (c) Year(s) of acquiring such certification(s):…….

16. (a) Is product standard affecting overall performance of the company? (i) Yes (ii) No

16. (b) If yes, then list the problems?.....

17. Development of product / Source of technology: (please tick)

(i) Indigenous / traditional

(ii) Own R&D

(iii) Collaboration with Indian lab

(iv) Collaboration with foreign lab

(v) Buying technology (mention foreign or domestic)

(vi) Sourcing from partner / parent company (domestic or foreign)

(vii) Open sourcing

(viii) Any other …….

18. Average R&D expenditure as % of turnover (including technology transfer, know-how fee, royalty etc.) (in Rs.): (please tick)	19. Technical tie-ups (if any) with R&D labs, universities or other agencies in India or abroad:
(i) 0 – 2 (ii) 2 – 4 (iii) 4 – 6 (iv) 6 – 8 (v) 8 – 10 (vi) 10 – 12 (vii) more than 12	

20. (a) Basic details of workforce:

Qualification	No. of employees
General	
Undergraduate	
Graduate	
Post-graduate	
Doctorate	
Professional	
Engineering graduate	
Engineering post-graduate	
Engineering doctorate	
Computer professionals	
Management degree holder	
Any other	
Total	

20. (b) Will it make your performance better if you can realistically take any of the following actions? (please tick and rank according to priorities)

(i) Employ more unskilled workers (ii) Employ more skilled workers

(iii) Pay more salary (iv) Modernisation of production

(v) Improving technology and product quality

(vi) Any other (please specify) …….

20. (c) What are your suggestions for labour market reform?

21. Highlights of performance since inception:

	Sales growth	Profit growth	Ratio of domestic turnover to total turnover
(i) 2000 – 2005			
(ii) 1995 – 2000			
(iii) 1990 – 1995			

22. What are the factors (in your assessment) which will affect your performance in next 5 years? (please list them)

23. Has government policy affected company's performance, and (if yes) then how?

24. (a) What are the factors for your continued good performance?

24. (b) What are the factors because of which other companies in your sector / cluster did not survive and had to close?

Appendix V

APPENDIX –V

List of 82 Traditional Startups companies

82 Group's of Companies		
S.No	**Name of the Company**	**Contact person & Address of the Company**
1.	**Suyog Dye Chemic Pvt. Ltd**	Mr. Chandresh – A – Devani Plot. No 6717 GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
2.	**Camex Intermediates Ltd.**	Mr. Mahavir. L. Chopra Plot No. 4720 / 33, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch. Gujarat
3.	**Mangal Murthi Chemicals**	Mr. Nilesh B. Patel Plot No. J / 1209, GIDC Estate Ankleshwar – 393002 Dist.- Bharuch, Gujarat
4.	**Krishna Chemicals**	Mr. Hasmukh D. Dudhat Plot. No 6911 GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
5.	**Shree Ram Dye - Chem Industries**	Mr. Anwar Amlani Plot. No C1/B- 7007, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
6.	**Devanshi Dyestuff**	Mr Naresh S. Patel Plot. No 141/2/F, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
7.	**Efflux Industries**	Mr. Bhupat Mitaliya Plot. No 435, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
8.	**Delux Chemical Industries**	Plot. No 502/10, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

9.	**Devam Alum Industries**	Mr. Baldev S. Ahir Plot. No 4711, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
10.	**Dynemic Products Ltd.**	Mr. R.B. Patel Plot. No 6401, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
11.	**Prayana Chemical Industries**	Mr. Mahesh Patel Plot. No 2303/A, Opp. Post Office Ankleshwar - 393002 Dist.- Bharuch, Gujarat
12.	**Kanchan Taru Chemicals**	Plot. No 70313, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
13.	**Mugat Dye-Chem**	Mr. Mahendra. M. Patal Plot. No 1923, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
14.	**DVs Industries**	Mr. Atulbhai Dave Plot. No 6012/2, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
15.	**Mayur Dye-Chem**	Mr. J.K. Patel Plot. No 4705/2/2, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
16.	**Jayshree Industries**	Mr. H. J. Patel Plot. No 4705/1/3, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
17.	**Samip Chemical Pvt. Ltd.**	Mr. Umesh S. Patel Plot. No 703, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
18.	**Krishna Chemicals**	Mr. M.P. Ramolia00 Plot. No 6726, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

19.	**Nucleophil Chemicals**	Dr. C.B. Upasani Plot. No 6708, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
20.	**Rewa Chemicals**	Mr. Satyam Patel Plot. No 3920, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
21.	**Shramik Chemicals**	Mr. Vimal Jethva Plot. No 6904, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
22.	**Vishnu Chemicals**	Mr. J.D. Bhagat Plot. No C1-3429, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
23.	**Sunit Dyechem Industries**	Mr. Kirit.C.Patel Plot. No C1/3430, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
24.	**Shree Ganesh Dyes.**	Mr. Ashok Rangani Plot. No C1-B/6833, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
25.	**Shyam Chemicals**	Mr. Bakul Patel Plot. No 6905, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
26.	**Shree Tripura Enterprise**	Mr. S.M. Pathak Plot. No 5307, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
27.	**Adarsh Dye-Chem**	Mr. Ramesh N. Makani Plot. No CIB/2523, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
28.	**Kanchan -taru Chemicals**	Mr. Jagdish K. Goswami Plot. No 703/3, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

29.	**Shreerang Industrial Enterprises**	Mr. S.S. Kusurkar Plot. No C-1/6826, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
30.	**Raviraj Chemicals**	Mr. Ghanshyam B. Shingala Plot. No 7120, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
31.	**Jay Yogeshwar Chemical Ind.**	Mr. C. K. Patel Plot. No 6713, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
32.	**Nivika Chemo Pharma**	Mr. Shankarbhai Patel Plot. No 1602, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
33.	**Sodar Industries**	Mr. Dahyabhai M. Patel Plot. No 1503, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
34.	**Mili Industries**	Mr. Purvesh V. Savalia Plot. No 1817, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
35.	**Suraj Dye-Chem**	Mr. Rajiv Mehta Plot. No 1106, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
36.	**Raghuvir Chemicals**	Mr. Ketan D. Narola Plot. No 6217/4&5, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
37.	**Shital Chemical**	Mr. S.M. Savalia Plot. No 1204, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

38.	**Astik Dyestuff Pvt. Ltd.**	Mr. Ram Ajekar Plot. No 707 B-C, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
39.	**Sky & Skylark Industrial Prod**	Mr. Dahyabhai Plot. No C1B-2513, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
40.	**Saurashtra Dyes & Chenicals**	Mr. Dhirubhai S. Patel Plot. No 6232, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
41.	**Reacton Chemicals**	Mr. H.V. Rupavatia Plot. No 6605, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
42.	**Vandana Chemicals**	Mr. Balvant N. Prajapati Plot. No 7409, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
43.	**Ravi Chem Industries**	Mr. J.V. Patel Plot. No 7402, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
44.	**Pure Chem Pvt. Ltd**	Mr. Rajkumar Goel Plot. No 4717, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
45.	**Pioneer Chemicals**	Mr. Indravadan Patel Plot. No 6832, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
46.	**Trimurti Chemicals**	Mr. K.K. Solanki Plot. No 6101/B, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

47.	**Mahadev Industries**	Mr. Natubhai B. Patel Plot. No 1505, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
48.	**Varniraj Chemicals**	Mr. Himat R. Dhanani Plot. No 6611, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
49.	**Avdhoot Pigments P. Ltd.**	Mr. Ashok M Patel Plot. No 6213, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
50.	**Deep Chem**	Mr. Vinod G. Jagani Plot. No 6414, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
51.	**Jigar Industries**	Mr. Pravin G. Patel Plot. No 3709/5, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
52.	**Sharda Industries**	Mr. Bhavesh B. Patel Plot. No 6909, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
53.	**Amar Chemical Industries**	Mr. Pravin K. Patel Plot. No CIB/6830, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
54.	**Sonal Chemicals**	Mr. G.M.Y. Dalal Plot. No 4758, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
55.	**Sharddha Chemicals**	Mr. Lalubhai B. Rudani Plot. No 6803, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

56.	**Sayan Gelenochem P. Ltd.**	Mr. Bhavesh B. Patel Plot. No 6001/1&2, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
57.	**Tejal Industries**	Mr. Liladhar J. Patel Plot. No 730, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
58.	**Prism Pigments & Colour P. Ltd.**	Mr. K.K. Sundaram Plot. No 6403, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
59.	**Kaiwlya Chemicals**	Mr. Mukesh B. Patel Plot. No 4705/215, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
60.	**Om Shanti Industries**	Mr. Kalpanaben G. Prajapati Plot. No C1/2525, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
61.	**Ashok Pharma Chem**	Mr. Chandubhai Kothia Plot. No 6715, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
62.	**Dolphin Chem**	Mr. Niksh Mehta Plot. No 6506, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
63.	**Surya Organics & Chemicals**	Mr. Arun D. Joshi Plot. No 6722, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
64.	**Kenny Pharma P. Ltd**	Mr. Kishor V. Kheni Plot. No 6902 & 03, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

65.	**Apex Laboratories**	Mr. Ramesh D. Gabbani Plot. No 4710, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
66.	**Glindia Chemicals**	Mr. Vinod H Patel Plot No. 4801 / AIIZ, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
67.	**Ronak Chemicals**	Mr. Dilip S. Patel Plot. No 4709/1, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
68.	**Siddarth Interchem P. Ltd**	Mr. Chandrakant V. Koladia Plot. No CIB / 6915, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
69	**Preeten Laboratories**	Mr. Pravin B. Gorasiya Plot. No 7103, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
70.	**Mass Pharma Pvt. Ltd.**	Mr. Atul.C. Patel Plot. No 7407, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
71.	**Abhayraj Pharma Pvt. Ltd.**	Mr. Anit A. Chavan Plot. No 2302, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
72.	**Akar Printers**	Mr. Ashok N. Chovatia Plot. No 5715, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
73.	**Welmech Engineering Service**	Mr. Babubhai K. Modi Plot. No 4304, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

74.	**Golden Ice Factory**	Mr. Jusab.D. Nathani Plot. No J/1711, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
75.	**Arbuda Ice Factory**	Mr. J.S Chaudhari Plot. No 4798, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
76.	**Shreeji Engineering Enterp.**	Mr. Chandubhai O. Parmar Plot. No 4610/A, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
77.	**Fibro-Chem Industries**	Mr. J.M. Shah Plot. No C-1-4726/3, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
78.	**Jay Polypack**	Mr, Jayesh A. Patel Plot. No 252, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
79.	**Perfect Ice & Coldstorage**	Mr.Firoz Nathani Plot. No 4906, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
80.	**Mansi Engineering Works**	Ms. Anshiyaben D. Vala Plot. No 5112, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
81	**Umiya Fabraicators**	Mr. Narendra J. Patel Plot. No 4909, GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat
82.	**Start Technology**	Mr. Vinod Rathi Plot. No , GIDC Estate Ankleshwar - 393002 Dist.- Bharuch, Gujarat

Appendix VI

APPPENDIX-VI

List of *33* Technology Startups companies

1) Defence Equipments & Accessories Group:

Defence Equipments & Accessories Group			
S.No	**Name of the Company**	**Contact person & Address of the Company**	**City**
1.	Coolroc Technologies ltd	Mr. V.V Shama 610B, Nilgiri block , Adiya Enclave ,Ameerpur Hyderabad-500038 Email: coolrocbpj@yahoo.com Tel: 91-40-23743373 Fax: 91-40-23752471	Hyderabad
2.	Qmax Test Techologies Pvr Ltd	Mr. Raj Kumar 518, Double storey block , New Rajinder Nagar , New Delhi -110060 Email : delhi@qmaxtest.com Tel: 011-28741127, Fax : 28744870	New Delhi
3.	Gulati glass Industries Pvt. Ltd.	Mr. Ajay Singh 25,Paschim Vihar Extension, New Delhi-110063 Email: gulatiglass@vsnl.net Tel: 011-25214544 Fax: 011-25214540	New Delhi
4.	Krishna International	Mr. Vishal Kurana 32,Community centre,Industrial area, Wazirabad ,Ring Road New Delhi-110052 Email: gravite@bol.net.in Tel: 011-27376966 Fax: 011-27372052	New Delhi
5.	Bright Bcernishings tools Pvt. Ltd.	Mr.Dev Raj 42,N.G.Ramaswamy road, Pappanicken palayam, Coimbatore- 641037	Tamil Nadu

		Tamil Nadu Email: burnish@vsnl.com Tel: 91-0422-2210122 Fax: 011-2210122	
6.	Ultimate Tools	Mr. K.Bhanumurthy 8,Cama Industrial Estate Goregaon(E), Mumbai -400063 Email: info@siplmail.com Tel: 022-26859337 Fax: 022-26854875	Mumbai
7.	G.W Precision Tools India Pvt. Ltd.	Mr. Jeffrey Archard Plot No 124-A , Bommasandra Industrial Estate, Anekal Taluk Bangalore-560099 Email: Jeffrey@gwindia.in Tel: 80-7831252/253 Fax: 80-7831254	Bangalore
8.	Givi Misure Pvt. Ltd	Mr Vasant Vibhute VITC Export Bhawan, 1st block, Plot no. 488, KIADB Complex, 14th cross, IV th phase, Peenya Industrial area Bangalore-560099 Email: givimisure@touchtelindia.net Tel: 91-80-51272559 Fax: 91-80-5117134	Bangalore
9.	Prolific Technologies	217, Gupta Place , A-2/42 Rajouri Garden, New Delhi-110027 Email: prolifictechnologies@vsnl.net Tel: 011-25102951,25463544 Fax: 25195569	New Delhi
10.	Mikronix Gauges Pvt Ltd	Mr. Abhay Hanchanal P.B.No. 701, B-29 , MIDC Industrial area, Chikalthana Aurangabad-431210 Email: abhay@mikronixgauges.com	Aurangabad
11.	Astra Microwave Products	6-3-639/640,303, 3rd floor Golden Edifice Building, Khairatabad	Hyderabad

		Hyderabad-500004 Email: sales@astramup.com Tel: 91-40-30618000 Fax: 23378944	
12.	Servocontrols & Hydraulics(I) Pvt Ltd.	Mr. Deepak Dhadute Survey No-683, Industrial Estate, Udyambag, Belgaum-590008 Email: deepak@servocontrolsinida.com Tel: 91-831-5202251 Fax: 2484496	Belgaum

2) Plastic & Machinery Parts Group:

Plastic & Machinery Parts Group			
S.No	**Name of the Company**	**Contact person & Address of the Company**	**City**
1.	Airtech Engineers	Mr. Sushil Sharma B-93, Okhla Industrial Area Phase-II, New Delhi – 110 020 Tel: 26385711 Fax: 26383309 E-mail: airtechdelhi@yahoo.com	New Delhi
2.	Premould	Mr. Ravi 5-5-35/229/1, Plot No. 16, Shakthipuram, IE, Kukatpally Hyderabad – 500 072 Tel: 91-40-23720309 Fax: 91-40-23720362 E-mail: premould@satyam.net.in	Hyderabad
3.	Siddhi Pet	Mr. Mangesh 193-F Bombay Talkies Compound Ram Marg, Himanshurai Road Malad (West) Mumbai – 400 064 Tel: 91-22-28804340 E-mail: siddhipet@yahoo.com	Mumbai
4.	Jagmohan Pla-mech Pvt. Ltd.	Mr. Nikunj J. Shah 115 Sharad Ind. Estate, Lake Road, Bhandup (W) Mumbai – 400 078	Mumbai

		Tel: 91-22-25955678 Fax: 91-22-25965434 E-mail: jagmohan@vsnl.com	
5.	Rithvik Machines & Automation Systems Pvt. Ltd.	Mr. B.K. Prahlade Rao 5-35/145 Prasanthi Nagar Colony IDA Kukat Pally, Hyderabad–500 037 Tel: 91-40-55299295 Fax: 91-40-23720697 E-mail: enquiry@rithvikmachine.com	Hyderabad
6	Shri Gajanana Industries (I) Pvt. Ltd.	Mr. B. Ganapathi (M.D.) Gala No. C-7, Hind Saurashtra Ind. Estate, Andheri-Kula Road, Marol Naka, Andheri (E) Mumbai-400 009 Tel: 91-022-28509909 Fax: 91-022-28591266 E-mail: ganapathi_b@yahoo.com	Mumbai
7.	Amritha Tool Crafts Pvt. Ltd.	Mr. K. Srinivas Plot No. 203-9, Phase-II IDA Cherlapally, Hyderabad-51 Tel: 91-40-27260704 Fax: 91-40-27260704 E-mail: ksrinivas@amrithatools.com	Hyderabad
8.	Mohanlal Industries	Mr. N. Pancal Sirhind Road, Bassi Pathana, Dt. Fategadh Sahib, Punjab – 140 412 Tel: 91-01763-250604 Fax: 91-0265-2390817 E-mail: newarm@dataone.in	Bassi Pathana
9.	Eyyani Electric Machines Pvt. Ltd.	Mr. E.K. Devadas (M.D.) B-234, 5th Main, 2nd Stage, Peenya Industrial Estate Bangalore-560 058 Tel: 91-80-28364923-24 Fax: 91-80-2/8366525 E-mail: eem@sancharnet.in	Bangalore

3) Auto Components Group:

Auto Components Group			
S.No	**Name of the Company**	**Contact person & Address of the Company**	**City**
1.	Karan Automotives (P) Ltd.	Mr. Ravinder Singh Plot No. 17/C, Opp. Whirlpool India NIT, Faridabad Tel: 0129-4025056-57-58-60 E-mail: ravinder@karanautomotives.com	Faridabad (Haryana)
2.	Marathwada Auto Compo Pvt. Ltd.	Mr. Ajit Soundargekar E-63, MIDC, Waluj, Aurangabad, Maharashtra – 431 136 Tel: 91-240-5625613-14 Fax: 91-240-2554941 E-mail: ajit@macpl.com	Aurangabad, (Maharashtra)
3.	Venkateswara Steels	1/89-6, Ravuthur Pirivu, Kannampalayam, Sulur, Coimbatore – 641 402 Tamilnadu, India Tel: 0422-5546988, 2681366 Fax: 0422-2680840 E-mail: venkateswarasteels@eth.net Website: www.venkateswarasteels.com	Coimbatore (Tamilnadu)
4.	Kalpa Industries	D-19, Bahadara Bad Industrial Area Hardwar (Uttaranchal) M: 9313836723 E-mail: kalpa.industries@hotmail.com	Hardwar (Uttaranchal)

4) Electronics, Computer Software & Hardware Group:

Electronics, Computer soft.& Hardware Group			
S.No	**Name of the Company**	**Contact person & Address of the Company**	**City**
1.	GRIDSOLVE	Mr. V.Khosla TBIU, Suite 5,6 IIT India – 110016 M: 9899370006 E-mail: vkhosla@gridsolv.com	New Delhi
2.	Elfsys Embedded Solutions Pvt. Ltd.	Mr. Praval Jain Module – 4, TBIV, IIT Delhi – 110 016 Tele: 011-26581524 (Extn.1) M: 9818460074 Email: praval.jain@elfsys.net	New Delhi
3.	Afford Computing Solutions Pvt. Ltd.	Mr. Rinka Singh 633, 100 Ft. Road, 3rd Block, 4th Cross Koramangala, Bangalore – 560 034 E-mail: rinka@affordcomp.com	Bangalore
4.	KritiKal solutions Pvt. Ltd.	Mr. Dipinder Sekhon A-28, Sector 16,Delhi E-mail: dipinder@dritikalsolutions.com	New Delhi
5.	Mechartes Researchers	Mr. Shishir Module – 2, TBIV Block 1 Ext. Hauz Khas, New Delhi E-mail: shishir@mechartes.com	New Delhi
6.	SM Onyomo Infotech (P) Ltd.	Unit 7, TBIU, Block – 1 Extn, IIT Delhi Tel: 26581524 E-mail: info@onyomo.com	New Delhi
7.	Virtual Wire Technologies	TBIU, Block-1 Ext, IIT Delhi, Hauz Khas, New Delhi	New Delhi
8.	Systemantics India Pvt Ltd.	20,1A Cross, J P Nagar Phase-ii Bangalore-560078 Tel: 26597008	Bangalore

Appendix VII

APPENDIX-VII

List of Venture Capital Funds Companies Approached

S.No	Name and Address of VCF
1.	**Aavishkar India Micro Capital Fund** 8A, Saahil, 14 Altamount Road Mumbai 400026 Tel: 022-56998955
2.	**APIDC Venture Capital Limited** 20B, ASCI College Park, Road No.3, Banjara Hills, Hyderabad – 5000034 Tel: 23550481/2/3 & 55510491/55510993&4 Fax: 040-23550487
3.	**Auto Ancillary Fund** C/o IL&FS Venture Corporation Limited. The IL&FS Financial Centre 7 th Floor, Plot No C-22, G- Block Bandra Kurla Complex, Bandra East Mumbai – 400051 Tel: 26533333 Fax: 26533297

4.	**Anand Rathi Realty Fund** J.K Somani Building, 3rd Floor British Hotel Lane, Bombay Samachar Marg, Fort, Mumbai- 400023. Tel: 22-56377000
5.	**Canbank Venture Capital Fund Ltd**. Regd. Off: 6th Floor, Naveen Complex No. 14, M G Road Bangalore – 560001 Tel: 080-25586506/25586507 Fax: 080-25583909.
6.	**Dhunn-Carr Management and Research India Private Limited** 22 Kartar Bhavan Minoo Desai Marg Coloba Mumbai 400005
7.	**Eureka Venture Fund** 307, Regent Chambers, Nariman Point Mumbai- 400021 Tel: 22025230/56308888
8.	**FIRE Capital Fund** 104, Ashoka Estate 24, Barakhamba Road Connaught Place

	New Delhi- 110001 Tel: 011-23723909
9.	**Gujarat Information Technology Fund** GVFL Trustee Company Limited 1st Floor, Premchand Annexe B/h Popular House Ashram Road Ahmedabad -380009 Tel: 079 6580704/6581285/6588741
10.	**Gujarat Venture Capital Fund 1990** GVFL Trustee Company Limited 1st Floor, Premchand Annexe B/h Popular House Ashram Road Ahmedabad -380009 Tel: 079 6580704/6581285/6588741
11.	**Gujarat Venture Capital Fund 1995** GVFL Trustee Company Limited 1st Floor, Premchand Annexe B/h Popular House Ashram Road Ahmedabad -380009 Tel: 079 6580704/6581285/6588741
12.	**Gujarat Venture Capital Fund 1997** GVFL Trustee Company Limited

	1st Floor, Premchand Annexe B/h Popular House Ashram Road Ahmedabad -380009 Tel: 079 6580704/6581285/6588741
13.	**Gujarat Biotechnology Venture Fund** Ist Floor, Premchand House Annexe Behind Popular House Ashram Road Ahmedabad – 380009 Phone: (079)26580704/26581285
14.	**HDFC Property Fund** C/o HDFC Ventures Trustee Company Ltd Ramon House HT Parekh Marg 169 Backbay Reclamation Churchgate Mumbai – 400020
15.	**HIVE Fund** C/o Hyderabad Informaiton Technology Venture Enterprises Ltd (HITVEL) 1ST Floor, Parisrama Bhavanam, Fateh Maidan Road, Hyderabad-500004 Phone: 040-23235253, Dir: 23299832

16.	**i-Labs Venture Capital Fund** 97, Road No. 3 Banjara Hills Hyderabad - 500 034 Tel : (040) 3352900 / 2 Fax : (040) 3351522
17.	**ICICI VENTURE CAPITAL FUND** ICICI Venture Funds Management Company Limited Raheja Plaza, IV Floor No.17, Commissariat Road D'Souza Circle Bangalore - 560 025 Tel : +91 80 2558 3681 Fax No. : +91 80 2558 0741
18.	**ICICI ECONET FUND** ICICI Venture Funds Management Company Limited Raheja Plaza, IV Floor No.17, Commissariat Road D'Souza Circle Bangalore - 560 025 Tel : +91 80 2558 3681 Fax No. : +91 80 2558 0741
19.	**ICICI EMERGING SECTORS TRUST** ICICI Venture Funds Management Company Limited Raheja Plaza, IV Floor No.17, Commissariat Road D'Souza Circle

	Bangalore - 560 025 Tel : +91 80 2558 3681 Fax No. : +91 80 2558 0741
20.	**INDIA ADVANTAGE FUND-1** ICICI Venture Funds Management Company Limited Raheja Plaza, IV Floor No.17, Commissariat Road D'Souza Circle Bangalore - 560 025 Tel : +91 80 2558 3681 Fax No. : +91 80 2558 0741
21.	**IDFC Infrastructure Fund** 17, Vaswani Mansion, 3rd Floor Dinshaw Vachha Road Churchgate Mumbai: 400-020 Tel: + 91 22 2202 0748 Fax: + 91 22 2202 0798 Website: www.idfcamc.com
22.	**India Auto Ancillary Fund** C/o IL&FS Investment Managers LTd The IL&FS financial Centre, 7th floor, C-22, G Block Bandra Kurla Complex Bandra (East) Mumbai – 400051

23.	**India Project Development Fund** C/o IL&FS Investment Managers LTd The IL&FS financial Centre, 7th floor, C-22, G Block Bandra Kurla Complex, Bandra (East) Mumbai – 400051
24.	**Information Technology Fund** C/o IL&FS Investment Managers LTd The IL&FS financial Centre, 7th floor, C-22, G Block Bandra Kurla Complex Bandra (East) Mumbai – 400051
25.	**India Value Fund** 12 Technopolis Knowledge Park, Mahakali Caves Road Andheri(East) Mumbai 400093 Tel: 56954888 Fax: 56954777
26.	**Indian Enterprise Fund** IL&FS Trust Company Limited IL&FS Financial Centre Bandra Kurla Complex Mumbai 400051 Tel: 26593097/ 26593083

27.	**IL&FS Private Equity Trust** IL&FS Financial Centre Plot no C-22, G-Block Bandra Kurla Complex Bandra (East) Mumbai- 400051 Tel: 022-26524165/26533333 Fax No: 022-26533297
28.	**Infinity Venture India Fund** 001, Turf Estate Shakti Mills Lane OFF Dr. E Moses Road Mahalakshmi Mumbai – 400011 Tel: 24902201-04 Fax: 24902205 www.infinityventure.com
29.	**India Property Fund** 304, Enterprise Centre Vile Parle (East) Mumbai – 400099 Tel: 022-- 26172555/66 Fax : 022--56772575

30.	**IDFC Infrastructure Fund 2** Ramon House 2nd Floor H.T Parekh Marg 169 Backbay Reclamation Mumbai - 400020
31.	**India Advantage Fund III** ICICI Venture Funds Management Company Limited Raheja Plaza, IV Floor No.17, Commissariat Road D'Souza Circle Bangalore - 560 025 Tel : +91 80 2558 3681 Fax No. : +91 80 2558 0741
32.	**India Advantage Fund IV** ICICI Venture Funds Management Company Limited Raheja Plaza, IV Floor No.17, Commissariat Road D'Souza Circle Bangalore - 560 025 Tel : +91 80 2558 3681 Fax No. : +91 80 2558 0741
33.	**Kshitij Venture Capital Fund** Knowledge House, Shyam Nagar Jogeshwari –Vikhroli Link Road, Jogeshwari (East)

	Mumbai – 400050. Tel: 022-56442234 Fax: 022-56442222
34.	**KITVEN Fund**. Karnataka Asset Management Company Pvt. Ltd 403, 4th Floor, HVS Court, 21, Cunningham Road, Bangalore - 560052 Telephone Number: 080-22285627 Fax Number: 080-22386836
35.	**Kerala Venture Capital Fund** 604, Pioneer Towers Marine Drive Kochi - 682 031 Ph: (0484) 236 1279 Fax: (0484) 237 3077
36.	**Kotak Mahindra Venture Capital Fund** 5th Floor, Bakhtawar, 229 Nariman point, Mumbai - 400 021 Phone - 91 22 56581100 Fax - 91 22 22855577
37.	**Kotak SEAF India Fund** Bakhtawar, 229, Nariman Point, Mumbai – 400021 Tel : 56596102 Fax - 91 22 22855577

38.	**Kotak Mahindra Realty Fund** Bakhtawar, 229, Nariman Point, Mumbai – 400021 Tel: 022-- 56341100
39.	**Marigold Mezzanine Investment Fund** 201, 2nd Floor, Sainara, North Avenue Linking Road Santacruz (West), Mumbai-4000054 Tel: 22-6058509/6058511
40.	**Novastar Capital Trust** G1, Krishnaji No. 205, III Main Defence Colony Indiranagar Bangalore – 560038 Tel: 51269191/51269292 Fax: 51269393
41.	**Opulent Venture Capital Trust** 216 A J C Bose Road Kolkota 700017 Tel: 033-2470107/ 2813271 Fax: 033-2470280
42.	**Punjab Infotech Venture fund** Udyog Bhawan 18 Himalaya Marg Sector 17, P.Box No.81

	Chandigarh 160017 Tel: 0172 2728563, 2703963
43.	**Rajasthan Venture Capital Fund** Rajasthan Trustee Compay Pvt Ltd C/o RIICO Ltd Room No 307: Udyog Bhawan Tilak Marg Jaipur- 302005 Tel: 0141-404804
44.	**Reliance India Power Fund** Reliance Capital Trustee Company Ltd, EO 1, Reliance Greens, Village Motikhavdi, P.O. Digvijaygram, District Jamnagar – 361140. Gujarat.
45.	**SIDBI Venture Capital Limited** 105 -107, 10th Floor, Jolly Maker Chambers II, Nariman Point, Mumbai - 400 021 Tel Nos. : 91 - 22 - 2204 3065 ~ 3069 Fax No. : 91 - 22 - 2204 3078 website : http://www.sidbiventure.co.in

46.	**Spice Capital Fund** 20, 11th 'A' Main, Vasant Nagar, Bangalore – 560052 Phone: 080-57687866 Fax: 080-57687866
47.	**Sicom Venture Capital Fund** C/2 Dr. Herekar Park Near Kamla Nehru Park Bhandarkar Road, Erandwana Pune-411004 Tel.: 91-20-25675806 / 07 Fax : 91-20-25675808
48.	**Small is Beautiful** KSK Energy Ventures Limited 8-2-293/82/A/431/A Road # 22, Jubilee Hills, Hyderabad – 500033 Tel: 040-23559922 to 29 Fax: 040-23559930
49.	**SREI Venture Capital Limited** Vishwakarma , 86 C, Topsia Road (South), Kolkota – 700046 Phone: 033-22850112-15/0124-27

50.	**South Asian Regional Apex Fund** **IL&FS Venture Corporation Limited** The IL&FS Financial Centre 7th Floor, Plot No. C-22, G-Block Bandra Kurla Complex, Bandra East Mumbai 400 051 Tel : 6533333 Fax : 6523015
51.	**Sourabh Venture Capital Trust** Flat no 21 A, Shakespeare Sarani Shakespeare Court-10D Kolkota – 700017 Tel: 033-22816192/6188/7718
52.	**SIDBI SME VENTURE FUND** SIDBI Trustee Company Ltd 105 -107, 10th Floor, Jolly Maker Chamber II, Nariman Point, Mumbai – 400021 Tel: 22043065 to 69 Fax: 22043078
53.	**Solitaire Capital India** S38, Greater Kailash II New Delhi –110048 Tel: 011-29214998 Fax : 011-51638289

54.	**SREI Venture Capital Trust** Viswakarma', 86 C Topsia Road (South) Kolkata – 700046 Phone: 033-22850112 - 0115/ 22850124 – 27 Fax : 033-22857542
55.	**Industrial Venture Capital Limited** Vairams, 112 Thyagaraya Road, First floor T.Nagar Chennai - 600 017 Telephone.No. 28153623 Fax.No. 28155673
56.	**The Hexagram Fund** Hexagram Investment Advisors P Ltd 302, Samarpan, Chakala New Link Road, Opp Solitaire corporate park, Andheri East, Mumbai – 99 Tel: 56922203 to 56922206
57.	**The Technology Venture Fund** Ventureast Trustee Company Pvt Ltd 1102, Babukhan Estate, Basheerbagh Hyderabad_ 500001 Tel: 040- 23299951/ 55510491 Fax: 040-23297449

58.	**Tamilnadu Infotech Fund** **C/o IL&FS Venture Corporation Limited** The IL&FS Financial Centre 7th Floor, Plot No. C-22, G-Block Bandra Kurla Complex, Bandra East Mumbai 400 051 Tel : 6533333 Fax : 6523015
59.	**Unit Trust of India- India Technology Venture Unit Scheme** UTI Venture Fund Management Co Ltd Raheja Tower, 12(M) Floor, 26/27 M.G.Road, Bangalore – 560001 (O)80-511124858/25323102/04 Fax: 80-25323127
60.	**UVF Private Equity Trust** UTI Tower, Gn Block, Bandra Kurla Complex, Bandra (East) Mumbai - 400051
61.	**Ventureast TeNet India Fund** Third Floor, TPL House No 3, Cenotaph Road Chennai- 600018 Tel: 044-24329863/64 Fax: 044-24329865

62.	**West Bengal Venture Capital Fund Trust for Information Technology, Telecom & Electronics** C/o West Bengal Electronics Industry Development Limited Webel Bhavan, Block EP &GP Sector V, Bidhannagar, Salt Lake Calcutta 700091 Tel: 033-3571740 / 3577565 / 3571710 Fax: 033-3571739 /3571711

Appendix VIII

APPENDIX-VIII

List of successful companies out of GVFL's portfolio:

Company	Area of Operation	Website/email
1. Permionics India Limited	Pioneers in using Membrane Technology for manufacturing water purifiers. These water purifiers have been designed to use in homes.	
2. Saraf Foods Limited	The company processes vacuum freeze-dried fruits and vegetables using indigenous equipment.	
3. Lumen Cables	Manufacturer of Ultrafine magnet wires (UMFWs). It is a fine copper wire having multiple insulating coats of polyurethane.	
4. H.K. Finchem	The Project conceived in 1992-93 used Short Path Distillation (SPD) for the first time in India to convert industrial grade Rice Bran Oil into value added products such as Tocopherol, Dimer, Linolic Acid etc.	
5. Gujarat Surgico	The company manufactures high end import substitute medical devices like oxygen masks and blood tubing sets.	
6. Colortek India Limited	The company produces liquid colorants used for colouring plastics. It improves the quality of the finished product of the plastic and the brightness of the Color remains as it is for very long time.	colortek_india @yahoo.com
7. Computerskill	The company manufactures pre-printed computer stationery and security instruments. It has diversified into packaging sector by creating infrastructure for providing Duplex Board Cartons.	
8. Lokesh Machines Limited	The company has a track record of designing intricate Special Purpose Machines (SPM), some of which have been designed and fabricated for the first time in India.	
9. 20 Microns Limited	Manufactures micronised minerals used as fillers and coating materials.	
10. Neilsoft Limited	The Company delivers engineering services for Computer Aided Design (CAD) and detailing, legacy data conversion, Geographical Information System (GIS) and content development.	rupa.shah@neilsoft.com
11. Radiant	The company began with High end IT Training, Software projects and software consultancy. Later a leading group engaged in education	

	business called SRM Group had bought out the company.	
12. Scicom Infotech Pvt. Limited	The Company is a complete business solution provider in Oil and Natural Gas industry. To provide services in the area of modeling and simulation application software development and consulting to companies operating in the niche market segment of scientific and engineering sector	
13. eInfochips Limited	eInfochips operates in areas of Application Specific Integrated Circuits (ASIC) design, testing and verification; embedded systems, Internet and intranet software products and services.	
14. Parsec Technologies Limited	The Company has developed 'state of the art' products for computer telephony integration and call center solutions.	
15. Deccanet Designs Limited	The company provides services and solutions in the telecommunications domain to a host of clients across the globe.	http://www.deccanetworld.com, http://www.deccanetdesignstele.com
16. E Cube India Solutions Limited	E Cube India is an embedded technology solutions provider, focusing on M-Commerce applications based on Smart Card and GSM technologies.	www.e3india.com info@e3india.com
17. Net 4 Nuts Limited	Solutions for Universal Resource Management (URM) which enables easy and efficient use of digital resources (e-mail, news, portfolio, PDA, mobile phone, Instant Messenger etc.) anytime, anywhere.	www.net4nuts.com info@net4nuts.com
18. Icenet.net Limited	The Company is an Internet service provider including dial-up access, server co-location; web hosting, Internet telephony, leased line services and enterprise business solutions	www.icenet.net

Appendix IX

APPENDIX-IX

List of SIDBI Venture Capital portfolio:

(A) List of NFSIT Portfolio (National Venture Fund For Software and IT Industry (NFSIT) companies:

Company	Area of Operation
1. Axiom Consulting Private Limited, Bangalore	Axiom Consulting Private Limited (Axiom), is a "Full Service Product Design" Company. The Company provides integrated Product Design (CAD) and Engineering solutions (CAE) which includes ideation, design and engineering services
2. Bhrigus Software (India) Private Limited	Bhrigus is a highly skilled IT service provider in the domain of voice-web convergence. Key areas of focus are: Interactive Voice Response (IVR) Computer Telephony Integration (CTI) § Speech Voice-Web Integration of Voice, Data, and Technology
3. Compulink Systems Limited, Pune	Software Products in the area of Professional Services Automation (PSA) and complementary 'productised' services and consulting.
4. Convergence Contact Center Private Limited, Kolkata	International Voice-based Contact Center.
5. DSS Infotech International Limited, Pune	Software services and products company in the area of Process Quality Monitoring, Database Administration, Total Quality Management (TQM), Process Improvement & Problem Solving and Decision support software
6. E-Cube India Solutions Limited, Baroda	Smart Card Solutions
7. Eisodus Networks Private Limited	Eisodus Networks is developing next generation technology for broadband access
8. Extenprise eSolutions (India) Private Limited, Pune	Software products and solutions enabling Business Process Integration (BPI).
9. IndiaIdeas.com Limited, Mumbai	Integrated Electronic Bill Presentment and Payment (EBPP) Service in India
10. Indus Teqsite	Embedded software and manufacturing advanced test

Private Limited, Chennai	equipment and ruggedised electronics for application in defense, aviation and space programmes
11. KarRox Technologies Limited, Mumbai	Software training and certification, Education on the Internet, Specialised training for IT enabled Services segment (e-CRM)
12. KMG Infotech Pvt Ltd	Software development company, which provides IT solutions using IBM, Java and Microsoft technologies. The Company provides software development and maintenance solutions to large and medium sized insurance, banking, financial services, healthcare and government organizations.
13. LatticeBridge Infotech Private Limited	LatticeBridge offers solutions in the Speech Technology space and empowers communication with information systems using voice commands.
14. Lexsphere Private Limited	LexSphere is a provider of support solutions to the international legal community. Offering world class, cost-effective legal and IT services.
15. Mithi Software Technologies Pvt. Ltd., Pune	Company develops technology and products for the Indian language (Multi-lingual) software.
16. Manthan Software Services Private Limited	Manthan is a provider of specialised software solutions for the retail and consumer goods industries
17. RT Outsourcing Services Limited, New Delhi	e-Services Company providing web enabled Customer Relationship Management (e-CRM) solutions and services
18. Small Device Mobile Technologies Pvt Ltd	Mobile Porting and QA Solutions provider for publishers, developers and operators globally
19. SoftTech Engineers Pvt. Ltd., Pune	Software Products for structural design and Construction Industry
20. Winfoware Technologies Limited, Bangalore	Software Services company specialising in the areas of operating systems, communications and middleware components for voice / data convergence communications.

21. Benchmark Softech Limited, Chennai	Offshore development, Global onsite consulting in Client/Server, e-Commerce and Internet Technologies
22. ECAD Technologies Limited, Bangalore	EDA Technology Service Provider (TSP). Provides Engineering Consultancy in areas like Signal Integrity, Thermal analysis and EMC engineering solutions for circuit boards used in high performance system.
23. ICRA Online Limited, Mumbai	Infomediary in financial services with focus on Mutual funds
24. Parsec Technologies Limited, New Delhi	Products for voice based Call centers
25. TRRS Imaging Limited, Mumbai	Document processing, Imaging, Forms processing and other IT enabled services in the area of data management and document management

(B) List of SME Growth Fund Portfolio companies:

Company	Area of operation	Website/email
1. Bravo Healthcare Limited	Manufacturer of wide range of pharmaceuticals products, OTC products and Nutraceutical supplements. Range includes Tablets, Hard Gel Capsules, Soft Gel Capsules, Injectables, Syrups, Powders, Ointments and Creams - each designed individually for the specific markets across the world.	http://bravohealthcare.com
2. Carzonrent India Private Limited	Carzonrent India Private Limited is the licensee of Hertz for India. The Company offers Chauffer drive, Self drive, Fleet Management Services and Limousine Services	www.carzonrent.com corporate@carzonrent.com
3. Digibee MicroSystems Private Limited,	Focused on entering the mobile phone business (GSM Handset, accessories and value added	http://dgbmicro.com info@dgbmicro.com

Bangalore	services) in India with feature-rich & high-quality products at competitive prices, customized for the Indian market with primary focus on rural and semi-urban/ low-income urban market. A privately held innovative company in the multi-media and wireless communication space	
4. Direct Logistics India Private Limited, Mumbai	Multinational Freight Forwarding & Logistics group having presence in India, China, Singapore, Hong Kong and Taiwan.	www.direct-logistics.com
5. Expressit Logistics Worldwide Limited, Mumbai	Provides Express Mail Management services in the niche premium segment of delivering security and service sensitive documents in the banking, financial services, insurance and telecom sectors.	http://expressitnet.com/
6. Indo Shell Mould Limited, Coimbatore	Manufacturer of ferrous and non-ferrous shell moulded casting components for two-wheeler automobile industry, hydraulic industry and home appliances.	http://indoshellfoundry.com/
7. Naturol Bioenergy Limited, Hyderabad	Naturol Bio Energy, is a new company setting up an integrated Bio-diesel and allied products (specialty esters for usage as bio-lubricants and phytochemicals/ neutraceuticals) manufacturing facility, with an installed capacity of 99,000 tpa.	http://naturol-bio.com/ info@naturol-bio.com

Appendix X

APPENDIX-X

List of ICICI Venture portfolio:

(A) List of Private Equity Fund Portfolio companies:

IAF Series 1

1. PVR
2. Infomedia
3. IndiaCyber gateway
4. Arch Pharmalabs
5. I-Ven Realty (Glaxo)
6. Welspun India
7. Samtel Color
8. Subhiksha
9. Nagarjuna Construction
10. Deccan Aviation
11. VA Tech
12. Malladi Drugs
13. Bharat Biotech
14. I-Ven Pharma (Dr Reddy's Labs)
15. Sangam
16. ACE Refractories
17. RFCL
18. Action Construction Equipment
19. Reliance Petroleum
20. Gateway Distriparks
21. Metropolis

IAF Series 2

1. Geometric Software
2. Arch Pharmalabs
3. Perlecan
4. Kalpataru Power
5. Home Solutions
6. Centurion Bank of Punjab
7. Sainik Mining and Allied Services Limited
8. Electrotherm (India) Limited
9. Tebma Shipyards Ltd.

ICICI Emerging Sectors Fund/Others

1. Shoppers' Stop
2. TV Today (Aaj Tak)
3. Crossword
4. Pantaloon Retail
5. Subhiksha

6. Trinethra
7. Infowavz
8. Rel Q
9. Bill Junction/Techprocess
10. Mars Restaurants
11. Miditech
12. Naukri.Com
13. Avesthagen
14. Biocon
15. Medicorp
16. Intas Pharma

(B) List of Real estate Fund Portfolio companies:

1. I-Ven Township
2. Integrated Township at Tellapur
3. Jubilee Hills Landmark Projects
4. TSI Business Parks
5. I-Ven Kolte Patil Projects
6. Corolla Realty
7. Entertainment World Developers

Appendix XI

APPENDIX-XI

List of Infinity Venture Capital portfolio:

(A) List of Infinity-I Fund Portfolio companies:

Company	Area of operation	Website
1. Indiabulls Financial Services Private Limited	Retail Stock Broking Services	http://www.indiabulls.com
2. INDIAGAMES	Gaming Development	http://www.indiagames.com
3. BRAINVISA	eLearning Solutions	http://www.brainvisa.com
4. ETI - Travel	Portal for Corporates modeled on mySAP.com	http://www.etravelindia.com
5. Cognosys	A Travel Technology Company	http://www.cognosyscorp.com
6. EPICENTER	Remote Customer Contact-Center Operations	http://www.epicentertechnology.com
7. AVENDUS	Technology Investment Bank	http://www.avendus.com
8. LINC	Software services	http://www.lincsoftware.com
9. AZTEC	Software Services	http://www.aztecsoft.com
10. ADAMYA	Incorporated in 1996, Adamya is an Innovation leader in the short range wireless communication domain. We provide cost effective, high quality Product and Reference Design, Prototyping, IP Licensing and Engineering Services to well established organizations in the following segments: • Semiconductor Companies • Original Equipment Manufacturers (OEMs) • Original Device / Design Manufacturers (ODMs) • Product Companies	http://www.adamya.com
11. INDIAPARENTING	A B2C portal focused on parenting & teenagers	http://www.indiaparenting.com

12. E-MECKLAI	Risk Management & Advisory Services	http://www.emecklai.com
13. AGENCYFAQS	Information services for the Advertising & Marketing Industries	http://www.agencyfaqs.com
14. Qsupport Technologies Pvt. Ltd.	Web Based IT Support Service for Corporates	
15. Clips India Pvt. Ltd.	Office Supplies eTailer	http://www.clipsindia.com
16. Inabling Technologies Ltd.	Internet Application Infrastructure	
17. E2E	High-End IT Consulting	http://www.e2e-tech.com

(B) List of Infinity-II Fund Portfolio companies:

Company	Area of operation	Website
1. Skyscape Inc	Skyscape, Inc. is the worldwide leader in mobile medical information. Utilizing only the most trusted, valuable resources and tools, Skyscape delivers customizable content by specialty to medical professionals directly at point of care.	http://www.skyscape.com
2. Scope E Knowledge Center	Scope e-Knowledge Center is a leading information and research organisation helping clients build intellectual property. Over 19 years in business with roots in business & industry research, databases, content and analysis	http://www.scopeknowledge.com
3. MD Anywhere Inc	Software Services	http://www.mdanywhere.com
4. Bay Area Credit Service	Financial and call centre services International recovery services organization	http://www.bayareacredit.com