CHAPTER 1

INTRODUCTION AND PROBLEM STATEMENT

1.1 Introduction

Indian information technology (IT) industry has been considered as world’s largest sourcing destination for various technology based services. This industry at present has approximately US$ 124-130 billion market which accounts approximately 67%-market share.\(^1\) Indian IT industry is showing a faster rate of growth and development on world map and able to offer 3-4 times cheaper services as compare to any other economy, including USA, towards its global recognition. This development contributed in the growth of Indian economy because multiple IT firms are establishing their IT sourcing destination in India which actually providing a better development for Indian IT industry.

Information technology sector is to be considered as one of the important sector of Indian economy, playing a vital role in the economic development of the country. IT sector is backbone to multiple sectors like hospitality sector, pharmaceutical sector, banking sector, information technology sector, travel and tourism sector. By obtaining significant foreign investment, this sector is also contributing in the overall brand management of Indian economy. In the last 10 years, this sector is also growing with a significant rate of 35% p.a. and has become one of the most significant growth catalysts for the Indian economy, contributing immensely to the country’s gross domestic product (GDP) 9.3% and public welfare. The role of communication has more significance, not only because it shares information but also it provides significant information to end users of various societies and provides employment opportunities.

There are number of media of communications like television, print and electronic media, which also impart significant contributions in the growth of this sector. The use of information technology is increasing day by day and so IT sector is emerging as one of the fastest growing sector, not only in Indian economy but

\(^1\)http://www.ibef.org/industry/information-technology-india.aspx
globally as well. The increasing role of IT sector has given ample opportunities for employment and growth. Undoubtedly, this sector triggered the growth of global economy and created multiple opportunities for employment generation. IT industry is contributing a significant role in the recognition of Indian economy in global market through its continual growing aspect.

Indian information technology has been considered as one of the successful industry globally. IT is basically known as sharing of multiple information from one user to another user or from origin to end user. Multiple devices have been used for sharing the information such as computer and other networking devices. The information sharing is not only limited with use of computers but also includes print & electronic media, televisions, radio etc. It is basically used for transforming valuable information from one hand to another hand within the society so that the end users could use the supplied information in a better way for various purposes.

According to “The Information Technology Associate of America (ITAM)”, information technology is defined as:

“The study design, development, information, support or management of computer based information systems, particularly software applications and computer hardware”.

Broadly, the IT sector can be classified on following three bases:

- Hardware
- Software
- Networking

Information technology pools the data as input, processes it and produces valuable information for different end users. There is a massive growth in the users of information technology which somewhere brought revolution for this sector in India economy.

The Indian IT sector is showing a progressive growth rate in recent scenario and expected to grow with 12%-14% during F.Y. 2016. According to an estimation of NASSCOM, Indian IT sector’s annual revenue could be US$ 350 billion by F.Y.
2025. According to a report by NASSCOM and Zinnov Management consulting Pvt. Ltd., there will be around 11,500 tech startups in India till 2020 as compare to 3100 technology startups at present. India’s internet sector is also providing significant growth in the economic development of IT sector and is expected to reach 10 trillion (US $ 146.72) by the year 2018 as per a report by the Boston Consulting Group (BCG) and Internet and Mobile Association of India (IAMAI). There is a massive increase in the users of internet and statistics says that total users during the month of June 2015 were over 350 million which account third largest in the world. The users of social media accounted to 143 million by April 2015 and users of Smartphone accounted to 160 million. According to a report of Gartner incorporation, public cloud services revenue in India is growing 33% on yearly bases and was estimated to be US$ 838 million in 2015 and also expected to reach US$ 1.9 billion by the year 2018 in the country.

During the period of April 2000 to December 2015, Indian IT sector (software and hardware sector) received significant cumulative foreign direct investment of worth US$ 20.42 billion as per Department of Industrial Policy and Promotion (DIPP) data. According to NASSCOM, Indian startups are expected to receive an approximate investment of US$ 5 billion. Significant increase in the users of E-commerce contributed a positive growth in the development of internet market. According to a data from Dealogic, close to 240 deals from private equity, worth US$ 3.8 billion took place in the year 2014 for IT sector, which also includes E-Commerce deals. Indian internet companies also witnessed significant contribution by venture funding during the year 2014 and close to 800 internet startups were funded by venture funding in the year 2014 as compare to 200 in the year 2012, said Rajan Anandan, Managing Director, Google India Pvt. Ltd. and Chairman, IAMAI. The total internet users as on July 1st, 2016 are estimated to 462,124,989 out of the total population of 1,326,801,576 which accounts 34.8% share of Indian population in terms of internet users.

The funding towards this sector is also increasing in terms of volume and approximately 554 start-ups got financing during the year 2014-15. As per an

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2[http://www.ibef.org/industry/information-technology-india.aspx](http://www.ibef.org/industry/information-technology-india.aspx)

3[Internet Live Stats (www.InternetLiveStats.com)](http://www.InternetLiveStats.com)
estimation, in IT & ITES sector, the total financing contribution of VC investment amounted to 55% during the year 2014-15.

1.2 Historical Perspective

Since its inception, India was trying to develop self-image in technology sector so that dependency on foreign technology can be reduced and it can be produced within the boundary of Indian economy. During the year 1965, United State of America made some amendments in USA immigration law and because of this USA became a centre for research opportunities for Indian professionals and they shifted to USA for technology based research orientation. This hard work of Indian professionals in USA contributed in the growth of IT sector in USA and sooner it was desirable to have another IT industry in other economic boundaries, resulting India, who had number of good educated and professionally sound talent in soft skills established IT sector in the country. In the starting phase of IT sector, most of the work was based on exporting software services to USA and other foreign clients.

India negotiated with multinational firms regarding their stake in technology sector and first negotiated with IBM which was a leading player of computer market during the era of 1960’s-1972. During the phase of 1966-1968, Indian government offered IBM to reduce its stake which could not succeed. IBM and ICL started supporting the aim of Indian government of promoting and developing domestic production by offering used computer on lease or rental basis to Indian customers. However this early aim of government towards developing domestic computer market could not succeed and the end result of this process was the technological backwardness. This was also reported by Government Electronic Committee in the year 1966 that this initiative was too early and India should proceed with using new technology and should avoid technology evolution.

Few significant outcomes were found in the report of Electronic Committee. In the year 1966, Department of Defense Supplies given the responsibility to make the strategies implemented under the monitoring of Electronics Committee of India. The committee also faced some issues such as less staff, other agency intervention, technical skills and due to these challenges, IT sector could not developed effectively. Nearly 150 license requests for IT projects were pending with Department of Defense
Supplies. The government established a Department of Electronics and a new Electronic Commission with an aim to formulate policies and effectively implementation of these polices in the proper development of IT sector. In the year 1975, DOE got the permission of issuing licenses towards imports of computers. DOE and new committee did well and focused on the development of IT sector in India. They also set up Santa Cruz Electronic Export Processing Zone (SEEPZ) near Mumbai with an aim to invite domestic & overseas investors to promote export of domestic production by using Indian components in the production process. Further, Electronic Corporation of India Ltd. (ECIL) was established and got necessary financial aid form the government for the production of mini computers. During the phase of 1973-1977, the market share of ECIL jumped from 40% to 53% in India but in spite of this rapid growth, ECIL was unable to work out on the production of a computer having all possible qualities, resulted ECIL got failed.

The DOE once again started targeting the operational role of MNCs and started negotiation with IBM and ICL to reduce the ownership percentage to nearly 40% in Indian operations. The government got a positive sign from ICL in a state of merging two Indian operations and decreasing its stake to 40% but did not receive any confirmation from IBM.

TATA group first established a software firm, Tata Consultancy Services (TCS) in 1968 with an aim to provide software related services to their clients. In the year 1974, Burroughs, a USA computer firm had a joint venture with TCS and became its first client. The initial work of this joint venture was to export software and printers from SEEPZ, alongside they also offered certain amount of coding task to TCS. After this joint venture, India got the operations of two MNCs, Burroughs and ICL. TCS grew rapidly because of its quality services and gained significant success during that timeframe and became one of the top IT company of India. In the year 1966, to strengthen the IT sector in India, WIPRO contributed significant role in the development of IT service sector. Mr. Azim Premji became the chairman of WIPRO. Another company Patni computer systems provided services towards software development since its inception in the year 1972 (formerly known as Data Conversion Incorporation).
In the year 1975, with an aim to provide technology based services and maintenance services to all foreign computer systems in India, Indian cabinet established a state-owned Computer Maintenance Corporation (CMC) (Brunner 1995 quoted in Lateef 1997). This initiative of the government faced both positive and negative outcomes as Indian economy got IT industry and on the other side faced lower growth for this industry.

The government once again discussed with IBM for decreasing the stake to 40% on which IBM proposes to the government to share equity in its non-computer operations to meet exports goals and fund an Indian science center and an electronic testing facilities but government did not respond in a positive manner on this, resulting IBM left out its Indian operations in the year 1978. The industry also faced negative consequences of exit of IBM in terms of getting less investment by other MNCs firms and due to this, IT industry could not grow with a faster and desired pace, in spite of having lot of talent of Indian personnel and development opportunities towards growth of IT sector in Indian scenario. But at the same side the role of government in closing down the IBM operations is not questionable because IBM could be allowed to exempt Foreign Exchange Regulation Act (FERA) policies implemented on other multination (Dedrick and Kraemer, 1993).

The Indian software industry did not exist during the phase of 1950’s and 1960’s. India started exporting its software and products during 1970’s. Very few multinational firms like IBM, ICL were operating in India for providing hardware and general software packages. Developing nations were realizing the importance of IT for their overall development. India as a developing nation also felt the use of IT with an aim to export it to gain significant foreign exchange. The export of software was only possible when it is designed as per the specifications of global standard, mainly as compare to IBM mainframe during the time frame of 1970’s.

During the phase of 1960’s and 1970’s, IBM was selling refurbished & antiquated machines to Indian companies because Indian companies were facing the problems of high import duties. The establishment of Indian software industry started with an action of Indian government lowering import duties on all IT peripherals which was not in favour of software exporters. In the year 1968, TCS was first Indian based software exporting company received few successful projects such as export
assignments with Iran, development of hospital information system in UK in collaboration with Burroughs Corporation. In the year 1988, Indian was one of the successful developing nations with respect to software export having US$ 12 million and nearly 30 export software companies. However software export companies were showing a good growth rate economically as well as financially but also facing some issues during the phase of 1970’s & 1980’s like shortage of hardware and lack of trained professional. In late 1980’s, the National Association of Software and Services Companies (NASSCOM) established by Indian government with an aim to make IT education more successful for the significant development of IT industry in India. The year 1980 got the invention of PC for retail user but was lacking in few features like user interface and client based programming. During the phase of 1980’s, work station was invented with an aim to fulfill the requirements of programming for mainframes computers. The ISV also got new shape with UNIX and C programming and brought easiness for client based programming. The growing phase of IT did not stop here and number of new software packages got in to the formation of application software.

The Indian government started exporting the computer and software during the year 1984 because one side government did not get significant success from government run computer firms and on the other side private firms were showing good success rate including the big firms TCS and HCL (Evans 1992).

The initial process of software export began as a mean of body shopping. In the year 1985, a 100% foreign owned firm Texas Instruments got the approval of Indian government to start a software industry in Bangalore, India. The main aim of this set up was to create a direct satellite link to USA. In the year 1989, Videsh Sanchara Nigam Limited (VSNL), which was an Indian government telecom company, got the success in creating a direct 64 kbps satellite link to USA. By the year 1989, total software revenue percentage reached to 90% (Schware 1992 cited in Lateef 1997).

Two reasons which given an opportunity to Indian engineers a platform to learn and increase their skills on latest tools & techniques which are used in software designing in the west and with a special attention to Silicon Valley were ‘Body Shopping’ and foreign operations. Multiple opportunities were created under the
banner of sequential development government initiative towards encouraging IT industry. Bangalore city became the point of focus for this development (Mitta 1999).

In the late 1980’s, generation of financial earnings of IT professional remain dependent on body shopping (labour intensive low value added programming for clients) and gained a total of 75% earnings from this concept. However in the next few decades, a huge decline came in the percentage of revenue earnings through body shopping and reported around 60% in the early 2000 (Dataquest, 2001). This way, a new thought was given to offshore operations.

In the year 1980, Wipro started a firm in Bangalore, during the year 1981 Mr. Narayan Murthy and his colleagues established a firm named Infosys with an aim to offer quality software services to their clients. Infosys sooner became a role model and an idol business model for most of the IT firms in India and because of its continual growth, Infosys also got listed in NASDAQ. There are number of classical examples which show that Indian IT industry has potential to grow and capable of providing world class IT services and contract programming services to their clients. Because of the changed immigration policies of USA, one side the Indian engineers were offered less incentives by USA and on the other side existing Indian professional who were working with USA firms were required to pay social security and various other taxes to USA government. As a result, In India some companies preferred to operate in the USA and some started working for domestic IT companies. Financially this move reported a significant growth and Indian IT export reached to US$ 485 million in FY95 as compare to US$ 128 million in the year 1990.

In the early stage of the year 1990, Indian firms started working towards the growth & development of contract programming and aimed at offsite contract programming. Off-site market gained significant growth in the year 1999 but on site market reported financial fall during the year 1999-2000 of about 45% as compare to the year1988 (NASSCOM 1998). Few firms specially Wipro and Infosys got listed in U.S. NASDAQ in late 1990’s.

In the year 1990, IT industry was somewhere much focused on software related services. IT industry was growing quickly but there was a need of formation of expert venture capital to support this sector financially. Lack of expertise in
technology based startups and absence of VC investment also affected growing phase of IT sector. The overall control of Indian government on private business firms before the period of 1991 created a hurdle in the growth & development of IT sector up to the period of 1991. In the year 1991, economic reform was introduced by Dr. Manmohan Singh, Hon’ble Finance Minister of India at that time, which brought some valuable benefits like international integration, possibility of foreign investment and possible financial aid to ventures. Indian IT industry got significant pathway of growth and development by this reform.

India began with its first IT operation by setting up Software Technology Parks of India (STPI) with an aim to create a satellite link between its Indian IT developers and clients at abroad. This reform in IT sector created a good impact on US clients and their trust on Indian developer became much stronger. Indian IT sector was growing nearly 50% every year because with the use of multiple operating system specially windows in PC made task related services much easier for developers and the use of C language and other high level language programming supported this task in easier way for better client services.

Post 1991 reforms started with a big change Y2K bug which was a paradigm shift in internet-telecom & dot com boom created a golden opportunity for Indian IT industry as USA firms started outsourcing their upgradation work to Indian IT industries because of a challenge of computer services closure. As a result there was a huge requirement of IT professionals in USA, UK and Canada for the fulfillment of their technological requirement which has given a jump in national GDP of more than 6%, since these economic reforms took place 20 years ago.

The 1991 economic reforms and continual assessment of liberalization policies helped Indian IT sector to grow in a positive manner and developed as one of the biggest IT destination across the world. Multiple employment opportunities have been created by this sector and helped in the employment of more than 30 lakhs. The current valuation of IT-BPM sector is estimated to be US$143 billion. This growth is expected to grow at a Compound Annual Growth Rate (CAGR) of 8.3 5% year-on-year and expected to be US$ 143 billion for 2015-16. The contribution of this sector in the India’s GDP is expected to be 9.5% during 2015-16. The formation of venture
capital industry in India is the end result of continual assessment of IT sector in India and its step by step growth till the end of the year 1999.

1.3 Features of IT Sector

IT sector is to be considered as one of the important sector of Indian economy providing multiple services to various sectors of the economy. With the use of computers, networking and other peripherals, this industry is helping in transformation of valuable information from one user to another user and making a strong platform for creating knowledge based economy. IT acquires the important information, process it, stores it and converts it in to various useful information to its end users through various modes such as audio-video, pictures, text etc.

Following are some of the significant features of IT industry:

i. The growing role of IT sector can be witnessed in almost all sectors of Indian economy including one of the important sector i.e. travel sector where networking plays an important role in their area of operation.

ii. The use of online banking, NEFT, RTGS, E-banking given a new birth to today’s modern era of banking just because of use of IT in banking world.

iii. India today has witnessed a massive growth in the users of E-commerce and this became possible only because of the networking and internet features provided by IT sector. Online shopping, online purchasing, online buying and selling of commodities are the classical examples of this growth.

iv. Hospitality sector, tourism sector also benefitted with the growing role of IT sector as online bookings of hotels became possible.

v. Businesses of today’s era are also using IT as their preferred destination for sharing the information among their clients and other related persons because it is much easier and time saving to share the data through IT platform as compare to any other media of communications.

vi. The growing role of E-learning is yet another significant feature of IT sector in the area of education sector. Students today can now access all education related important information online and even check their results and other details on internet.
vii. Telecommunication sector, medical sector also blessed with the features of IT sector.

viii. Another factor that leads to key feature of IT industry is that this sector requires less investment during startup time and because of this feature, multiple opportunities are available to young IT professional to setup their technology based startups in the economy.

ix. It is possible to avail the services on rental basis without worrying about infrastructure development & its maintenance.

x. IT Sector is generating income in form of foreign currency which contributes a lot to foreign currency reserve in a developing country like India.

xi. It provides jobs to educated unemployed people and due to this, proportionate of number of jobs and investment is high in IT sector as compare to other industries.

Figure 1.1: IT & ITES India: Sector Wise Break up of Export Revenue

<table>
<thead>
<tr>
<th>Service</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Services</td>
<td>56%</td>
</tr>
<tr>
<td>BPM</td>
<td>23%</td>
</tr>
<tr>
<td>Software Products and Engg. Services</td>
<td>21%</td>
</tr>
</tbody>
</table>

Figure 1.1 represents the sector wise break up of export revenue generated by IT & ITES sector in India during financial year 2015. With the help of above diagram we can conclude that in the export revenue, IT services contributed 21% revenue, BPM contributed 23% revenue and software products and engineering services contributed 56% revenue in total revenue.
1.4 Challenges Faced by IT Sector during Growth Period

The present Indian IT industry has an important position in the global market. The Indian IT market is one of the emerging markets having a significant brand image.

*The following figure describes the classification of IT sector:*

![Figure 1.2: Classifications of IT sector](image)

The IT industry in India started in the year 1974 with an exporting contract between mainframe manufacturer, Burroughs & its sales agent of India, Tata consultancy services (TCS) which was related to export of programmers for the installation of system software for their clients in USA. The growing phase of Indian IT industry was not easy because there were number of factors which were not in the favour of its origination.

*Following are some economical and financial challenges faced by Indian IT industry during its growth stage:*

i. In the initial stage of its development, IT industry faced technological backwardness because of less availability of domestic production of competitive peripherals and absence of local market for promotion, distribution and development.

ii. IT industry also faced challenges like lower availability of skilled staff, involvement of third parties and other agencies, absence of technical skills.

iii. IT industry also faced financial issues and got less investment due to government intervention in IBM operation. IBM left out its Indian operation in 1978 and because of this incidence investors did not invest in Indian IT operations.
iv. Another challenge in the growth of IT sector was the high import tariff duties on hardware and software during the phase of 1960’s-70.

v. IT industry also faced the absence of venture capital investment which also became a big hurdle in the growth of IT sector in Indian economy. During the growth phase of IT industry, the funding from VC was unavailable to IT sector and it was much more focused on financing through Banking and Non-banking institutions.

vi. Another challenge was the unfavourable conditions and policies of government towards private companies during that tenure.

vii. Adverse conditions for software industry during the phase of 1970’s because Indian economy was state controlled.

viii. Less availability of bank finance due to ineligibility of exporters and less availability of equity capital.

It has been observed that the growth of Indian IT industry was under unfavorable conditions and there were number of micro and macro lever factors which became hurdles in the growth of IT industry in Indian economy. The IT sector of India got a new development with changed policies from the government elected under Mr. Rajiv Gandhi, who became Prime Minister of India in the year 1984. The New Computer Policy (NCP-1984) was introduced with a prime focus to reduce the import tariff on hardware & software up to 60%. IT sector started getting financed from banks and sector also got freedom from license-permit Raj. Foreign firms got permission to set up their wholly-owned subsidiary in India. For the production of mini computers, ECIL was established and funded by Government of India. 1991 phase also opened the door for foreign investment to choose Indian industries as their destination for investment (Mathur K.S, 2006).

1.5 Venture Capital: A Source of Funding for IT Sector

The Concept of Venture Capital came into existence during the year 1946 in the USA and in the last few decades, Venture Capital sector is contributing a significant role in the development of financial market of Indian economy and providing significant financial support to various sector of the economy especially in high-tech industries like biotechnology, information technology (IT) and e-commerce.
VC is a fund based financial service that provides financial aids to new and growing companies, startups for their financial and overall development.

Another term which replaces the concept of VC is ‘Private Equity Investment.’ It is a type of investment which is being offered by institutions or other investors in the financial development of public and private owned companies. VC investment has also been considered as an important source for startup companies. Selecting an investment decision for a company which typically offers high risk and high return, VCs arrange their funds from equity capital, convertible debt, shareholder’s contribution, loans with separable option, preferred stock, and participating loan. It has also been viewed that VC target those startups that are not able to generate financial resources from any financial institutions, whether organized or unorganized such as banks etc. VC has also been considered as a financial aid to high risk & high growth potential new startups which sometimes also used as a synonym to private equity.

There are number of criteria opted by VCs during the screening process of a firm for funding decisions (MacMillan, Siegel et al. 1985). The presentation of business plan by entrepreneurs has been considered as one of the important tool of investment decision during screening process of a firm by VCs (Roure and Keeley 1990; Hindle 1997; Zacharakis and Meyer 2000).

The contribution of VC in the development of IT sector of India cannot be unseen. IT sector plays an important role in regional and economic growth of an economy; at the same side any technology based startups need valuable financial support from different perspective investors. In the recent few years this sector has seen significant funding contribution by VC in Indian perspective. SEBI report on investment done by SEBI Registered Venture Capital Funds (VCF) and Foreign Venture Capital Investors (FVCI) towards IT sector in Indian perspective during 2007-10 reveals that the investment in the year 2007 was ₹ 82.1billion, in the year 2008 the amount of investment increased to ₹ 94.65 billion. In the year 2009 and 2010 and 2011 the total investment amount was ₹ 109.6 billion, ₹ 134.08 billion and ₹ 178.39 billion respectively. (100 crore = 1 billion)
There are certain success factors which emphasized the growth aspects of VC industry in Indian perspective which are based on Tax, regulatory & legal aspects, process of financial resources and its investment followed by exit strategies, role of VC as industry for safeguarding the issues of investors for accelerating the growth of economy, global exposure & investment opportunities, R&D & technological innovation for better sustainable development worldwide.

The growing role of VC industry is providing a base for success of new startups and so technology based startups are being fascinating by VC investment worldwide. Development and growth of any industry largely depends upon necessary competence which helps other sector to grow in viable directions. Recent phase of VC industry is doing well but the present performance was not initiated with the beginning of this industry. The starting phase of VC industry was not so much favorable from investment point of view. There were number of factors behind this issue such as poor resources, unawareness and environmental issues, even for new technology based startups, the primary funding was unavailable from VC investment and hence they were more dependent on Banking and Non banking institutions.

Indian economy gained significant foreign investment after 1991 which follows the liberalization process of economy which started in late 1980’s. The beginning of PE and VC industry in Indian perspective largely depends upon the creation of Risk Capital Foundation which was established in late 1975. The phase during the year 1995-2000 has seen spurred entry of various private equity firms in Indian economy for setting up their processes. All the companies who entered during this phase were primarily targeting the IT sector for their funding decision.

1.5.1 Historical Perspective

VC as a financial tool has played a significant role in the economic development of developing economies. The success history of VC in the ancient era was the end result of various developmental institutions like IDBI, ICICI, and SFC etc. During the phase of 1920’s & 1930’s, the funding for new ventures was only done by wealthy families of investors. Various ventures were funded by these investors including Eastern airlines & XEROX, the famous one. In 1950, VENROCK,
a kind of special VC fund was established by a family named Rockefeller for providing necessary financial support to new technology ventures.

The role of government policy has been found an important factor in the development of VC environment and thus according to Mark Heesen, president of the National Venture Capital Association, during the phase of 1960’s-1962, private way got approx US$205 million through 585 licensed Small Business Investment Company (SBIC). Various companies were funded through early VC during the phase of 1960’s & 1970’s and given growth & sustainability to sectors like technology and EDP companies.

In the starting phase of 1980’s, it has not been even thought of that Indian Economy would be having a VC industry. There seems to be no space for VC industry due to the political & social environment of Indian economic system. Nevertheless, public sector first started VC with the government intervention. The need to develop VC as a financing tool got spurred in the year 1973 and a committee on development of small and medium enterprise brought in the significance of such kind of institution.

There has been a high level of government’s involvement in the formation of VC from the point of economic development of the economy. The phase of 1980’s brought the significance of initiating liberalization of economy & the government elected under Mr. Rajiv Gandhi in the year 1984 given consent for liberalization of economy, which earlier was unable to take place due to policy failure by several bureaucratic factors. Indian government did not have any guidelines for VC prior to the year 1988. With an aim to promote VC firms through state controlled banks, Indian government issued the first guidelines in the year 1988, however private sector was not given preference for the same (Ramesh and Gupta 1995). World Bank also showed its interest in promoting economic liberalization in India and in 1988, VC was structured in India (Ministry of Finance, 1988).

In the year 1988, India’s second largest development financial institution ICICI promoted Technology Development & Information Corporation of India (TDICI) for the process of VC in India. ICICI also established a division in Mumbai with an aim to promote early startups under the headship of Ms. Kiran Nadkarni,
former TDICI president (Nadkarni 2000, Pandey 1998). ICICI chairman Mr. Vaghul faced various regulatory issues and formed an instrument ‘Conditional Loan’ for India with a special feature of no interest and royalty on sales between 2% to 10%. This was an interest free loan and required only royalty on venture generated sales. However this scheme failed due to capital gain point of view (Pandey 1992). Three software services, one engineering and one food product firm got this funding with lot of hard work and follow up done at the end of division for many such kind of investment for financing purpose. It is also to be noted that IT sector got high attention towards investment. In the year 1988, ICICI and UTI formed TDICI with an objective to gain the feature of tax pass through, which was only available to UTI by parliament. It was an equal partnership and this partnership registered a fund named UTI’s Venture Capital Units Scheme (VECAUS). There were number of reasons for the establishment of TDICI such as inability to evaluate venture investment, portfolio issues, poor administration and follow up.

TDICI opened the span of its operations to gain the benefits of IT revolution & out of the various options available for funding in technology, Bangalore city became point of investment for the growth and development of this sector. Top MNCs like WIPRO, Infosys were also located in this city (Nadkarni, 2000).

There were number of success history for TDICI VECAUS (I) like investment of ₹25 million in IT firms of Bangalore, funding in highly reputed software firms, transformation of firms in to public etc. TDICI somewhere lacked in opportunity cost while targeting only technology firms and by ignoring the investment in profitable business opportunities, however the fund gained 28% ROI (Pandey, 1998). Total 40 investments were administered by VECAUS by facing various difficulties for making the investment. The challenges faced by TDICI could not become hurdle in the success path way of TDICI and it emerged as a successful VC division and also established India Venture Capital Industry (IVCA) under the able management of Kiran Nadkarni.

Various VCFs were set up during this phase such as Gujarat Venture Finance Limited (GVFL) in 1990, Industrial Development Bank of India (IDBI), Gujarat Industrial Investment Corporation (GVFL 2000). GVFL did significant funding during the phase of 1990’s to 1995 & targeted various firms for investment with
special attention to IT firms. Further, Andhra Pradesh Industrial Development Corporation (APDIC) was formed by state government of Andhra Pradesh, CanBank by Canara Bank, headquartered in Bangalore, Credit Capital Venture fund by Lazard, Credit Capital & Asian Development Bank, Commonwealth Development Corporation.

In 1993, with the movement of TDICI’s Nadkarni, Indian Venture Capital Association (IVCA) was formed with its headquartered in Bangalore. TDICI’s Nadkarni was the first president of IVCA. The following were the other members of IVCA:

- TDICI,
- GVFL,
- IDBI’S venture capital division,
- TCTC,
- APICD’s venture capital division
- Canbank ventures
- Credit Capital Corporation

There were some private members also in the list like Credit Capital Corporation, Indus ventures, Grindlays, British venture firm 3i Corporation. The role of IVCA was not emerging as an important body for venture capital investment but at the same time during 1999, NASSCOM played a vital role in the emergence of IVCA. Overseas firms invested major funding in venture capital investment and about 80% of total investment was done through overseas sources (Singhvi 1999). IVCA became a route for funds, invested by foreign funds like most the firms were registered in Mauritius due to regulations and taxes reasons of Indian government which they wanted to avoid because of lobbying issues of Indian government. With the increasing demand of domestic investors, SEBI was formed to manage the regulations of Foreign Investment Promotion Board and issues of Ministry of Finance for overseas funds however IVCA did not allow it for becoming a part of regulatory discussion in late 1990’s.

In the year 1995, Bill Draper established Draper International with Robin Richards, who was a student of MBA (second year) in Stanford University. The aim
of forming Draper International was to start venture investing in developing countries and so he screened various countries for this investment and found India as an idealistic country. He also gained significant investment from successful Silicon Valley entrepreneurs and Indian investors (Draper, 2000). Kiran from TDICI became the head of Draper International for Indian operations.

Walden International Investment Group (WIIG) started its venture capital functioning in India during late 1996 and established Walden-Nikko India Venture Co., (a JV between WIIG and Nikko Capital of Japan). This joint venture was primarily investing in early and late stage firms.4

The first set of rules and regulations towards the registration and investment process of VC firms were issued by SEBI in 1996 and during the same year SEBI (Venture Capital Funds) Regulations, 1996 was formed. Because of this initiative, the investment by overseas and private domestic VCs started in India. However due to regulatory issues, this change could not succeeded with a faster pace, resulting 50% of offshore pool of funds could not be invested for development purpose (IFC 1999).

There were number of offices opened during the year 1998 in cities like Mumbai, Bangalore and New Delhi. Year 2000 got significant increase in number of VC offices in two major cities of India, New Delhi and Mumbai. This happens because of the increased role of Silicon Valley as contributor to technology sector with reference to VC industry also. In the year 2000 Walden Nikko shifted to Bangalore and closed its Mumbai office. Chrysalis, a Mumbai based VC firm and Infinity, a Delhi based VC firm started functioning in Bangalore. The major reason of choosing Mumbai as operating destination by Chrysalis was Internet boom (Dhawan, 1999). Partners of Infinity were based at Delhi so they have shifted to Delhi also. VC firm SIDBI operated in Mumbai because of its headquarter location. Many other big VC firms started operating in Mumbai including VC firm CITI Bank and due to this, Mumbai got variety of VC firms operating within its range and looked like a mirror image of New York financial cluster. The role of overseas private sector found inadequate in the development of venture capital in Indian environment [Vinod Khosla (2000) study during 1993-1996]. In the year 1993, Bill Draper faced the same case and shifted back to Silicon Valley, however he was handling multiple positions

4 wiig.com, 2000
in federal government and United Nations. Bill Draper was investing in venture investment since 1959.

Till December 1998, 21 VC firms registered with IVCA out of which eight in public sector and seven funded by multilateral funding agencies (IVCA 1998). However, IVCA could have done in a better way subject to changes in regulatory structure and might help in the development of overall economy.

Further, Small Industries development Bank of India (SIDBI) formed SIDBI Venture Capital in 1999. Unit Trust of India created a private equity firm UTI venture funds. IDFC Private Equity was formed by Infrastructure Development Finance Company (IDFC) in 2002. During 2003, ICICI venture fund and Actis fund came in to existence. During 2004 investment in firms grew significantly and multiple private equity firms became public. During 2005, investor started diverting their focus on other non IT firms for investment like production unit, manufacturing units and industries based on domestic consumption. SEBI also allowed investment in real estate firms. Financially also private equity firms started investing in India because they got good success in initial public offer. The successful VC firms operating today are the outcome of the boom of the year 1983. As per VCC Edge Statistics, more than 1096 venture deals were signed during 2015 by angel and VC investors.

Table 1.1: List of Top VC Firms in India

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Firm's Name</th>
<th>Key Sectors</th>
<th>Key Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>500 Startups</td>
<td>Consumer commerce, Design, Food tech, Cloud services, Family tech and education, Payments and Financial services</td>
<td>EduKart, Urjakart</td>
</tr>
<tr>
<td>2</td>
<td>Accel</td>
<td>Consumer, Internet, Mobile, Healthcare, Enterprise Software &amp; Services</td>
<td>Flipkart, BabyOye, Myntra, BookMyShow, HolidayIQ</td>
</tr>
<tr>
<td>3</td>
<td>Ascent</td>
<td>Technology, Ecommerce, Healthcare, Financial Services, Consumer Brands, Infrastructure</td>
<td>Big basket</td>
</tr>
<tr>
<td></td>
<td>Venture Capital Firms</td>
<td>Industry Focus</td>
<td>Company Names</td>
</tr>
<tr>
<td>---</td>
<td>----------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td>Bain Capital Private Equity</td>
<td>Consumer, Retail &amp; Dining, Financial &amp; Business Services, Healthcare, Industrial &amp; Energy, Technology, Media &amp; Telecom</td>
<td>Himadri</td>
</tr>
<tr>
<td>5</td>
<td>Basil Partners</td>
<td>IT Services</td>
<td>Karmic Life sciences</td>
</tr>
<tr>
<td>6</td>
<td>Bessemer Ventures Partners</td>
<td>Internet and mobile, Software products, Financial services, Healthcare, Power and infrastructure</td>
<td>Snapdeal</td>
</tr>
<tr>
<td>7</td>
<td>Blume Ventures</td>
<td>Software, Mobile, E-commerce</td>
<td>Purplle, BedBathMore, RoadRunnr</td>
</tr>
<tr>
<td>8</td>
<td>Clearstone Venture Partners</td>
<td>Infrastructure, E-commerce, Social, Mobile</td>
<td>Games2win, Billdesk</td>
</tr>
<tr>
<td>9</td>
<td>Eight Roads Ventures</td>
<td>Healthcare, Technology, Consumer</td>
<td>BankBazaar, Chai Point</td>
</tr>
<tr>
<td>10</td>
<td>Forum Synergies</td>
<td>Engineering, Healthcare, Clean Technology, Information &amp; Communication Technology</td>
<td>Drishti, Cbazaar</td>
</tr>
</tbody>
</table>

*Source: sutrahr.com*

### 1.5.2 Venture Capital Financing in IT sector

The era of 1970 triggered with the processes of exporting contract programming by IT firms. Working of any firm largely depends upon the micro and macro level factors of environment that affects the close operation of the firms. Exported firms and local firms were also facing the challenges of business environmental issues, but at the same time IT professionals of Indian perspective were putting their green thumb to showcase their skills to develop the Indian software and hardware industry by creating their own designs. The global acceptance of UNIX is a classic example of this development.
During the phase of 1970’s, India got a spurred development in IT sector and got significant growth in terms of IT labour supply and software and hardware development. This development helped Bangalore city in becoming a nodal center of IT infrastructure growth. Taking a big step, WIPRO, a reputed firm entered in this city for their work of operation during 1980’s. This development of Bangalore city does not continue long because of lack of resources pertaining to this city.

The era of 1991 opened the door for foreign investment in India and also started outsourcing of software development to USA. However Indian firms, primarily focusing on design and development only, were struggling with the factor to labour employment as compared to other development economy. This also resulted in the favour of Indian exporters and recent IT industry is a classic example of successful support and hard work of Indian exporter during that phase.

Skilled and quality labour still was a big challenge for IT industry. Almost 3-4 lakhs engineers in a different discipline are produced every year from various universities but the question here is about the quality deployment of this educated force. Many of these target good MNCs for their jobs.

The present IT industry has a global acceptance due to its skills pertaining to fulfill demand and ability to transform market orientations. At the same side this industry is also fighting with limited boundary of operations which are merely limited to programming related tasks. The main reason of this inability is lack of social, economic and marketing awareness while other countries like Israel, Taiwan, and America pay adequate focus to fulfill the demand and creates a suitable user interface for their users.

It has been observed that IT professionals hesitate to start a new venture and they prefer job oriented opportunities in IT companies. There might be various issues for opting above decision. In Indian domestic environment, financial issues play a vital role for any start up decision. Ownership is also an issue with Indian entrepreneurs as they prefer more than 51% ownership and hardly allow any venture investment that could reduce their ownership. This became a problem of getting finance to early stage/ seed stage venture as venture capital financers were targeting only later stage projects.
However this issue has been continued since long and alongside VCs showing their faith on skills of IT professionals motivated them to start a new venture. Silicon Valley became a classical example of this motivation. As per Annalee Saxenian, “during the phase of 1980’s and 1997, approximately 565 firms were established by Indian entrepreneurs who show nearly 6% of the total establishment.” This initiative of Indian entrepreneurs brought a big change in the growth of new startups and all the issues such as risk taking capacity, financial barrier were ignored by the investors and they altogether started working in new directions.

The era of 1960’s & 1970’s got limited functionality by VC firms as they were merely considered as financial resources for technology backed firms, resulting VC firms lost the attentions of investors. The sudden crash of stock market also supported this down turn. The year 1978 brought sound jump in the functioning of VC firms due to intervention of USA labour department’s ERISA legislation by which VC firms were able to raised US$ 750000 fund from investors.

Table 1.2: Industry Wise Cumulative Investment Details

<p>| Industry Wise Cumulative Investment Details of SEBI Registered Venture Capital Funds (VCF) and Foreign Capital Investors (FVCI) |
|-----------------|-----------------|-----------------|-------------------|
| Particulars     | as on March 31, 2016 (₹ in Crore) |</p>
<table>
<thead>
<tr>
<th>Sectors of Economy</th>
<th>VCF</th>
<th>FVCI</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology</td>
<td>1843</td>
<td>3993</td>
<td>5561</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>1339</td>
<td>6600</td>
<td>7257</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>489</td>
<td>327</td>
<td>756</td>
</tr>
<tr>
<td>Biotechnology</td>
<td>252</td>
<td>111</td>
<td>362</td>
</tr>
<tr>
<td>Media/Entertainment</td>
<td>716</td>
<td>958</td>
<td>1294</td>
</tr>
<tr>
<td>Services Sector</td>
<td>3488</td>
<td>2731</td>
<td>4592</td>
</tr>
<tr>
<td>Industrial Products</td>
<td>1068</td>
<td>897</td>
<td>1665</td>
</tr>
<tr>
<td>Real estate</td>
<td>10060</td>
<td>992</td>
<td>10587</td>
</tr>
<tr>
<td>Others</td>
<td>18154</td>
<td>28375</td>
<td>40101</td>
</tr>
<tr>
<td>Total</td>
<td>37410</td>
<td>44984</td>
<td>72175</td>
</tr>
</tbody>
</table>

*excludes ₹ 10219 crore of FVCI investments through VCFs

Source: The above report is compiled on the basis of quarterly information submitted to SEBI by registered Venture Capital Funds and Foreign Venture Capital Investors.
Table no. 1.2 represents the cumulative investments of SEBI registered VCF and FVCI as on 31st March, 2016 in various sectors of economy. It can be analyzed that total investment in various mentioned sectors by VCF and FVCI is ₹ 721.75 billion out of which VCF’s investment is ₹ 37.410 billion and FVCI’s investment is ₹ 44.984 billion. Out of all the above sectors, real estate sector accounts highest investment of ₹ 10.587 billion by VCF and FVCI.

1.5.3 Venture Capital Financing Process

In order to make a funding available to a venture, there are six stages of venture capital financing which are as follows:

- **First Stage**
  - Seed Funding Stage
- **Second Stage**
  - Start-up Stage
- **Third Stage**
  - Growth Stage
- **Fourth Stage**
  - Second Round Stage
- **Fifth Stage**
  - Expansion Stage
- **Sixth Stage**
  - Exit Stage

*Figure 1.3: Stages of Venture Capital Investment*

1.6 Motivation behind the Study

From the very beginning, I was interested in studying the one of the important tool of modern financing ‘Venture Capital’ in the development of IT Sector in Indian context. My initial focus was refined first during the course of my Ph.D. studies in understanding of VC’s dimensions in Indian context and second as I have progressed in elaborating the pertinent literature, my thesis thus focuses on understanding the role of venture capital in IT sector based on their selection process, investment motives,
risk-return relationship, studying the relationship of assignment of weights. The underlying assumption of my research is based on the determination of such factors which cause the selection and rejection of a firm for investment decision because it has been observed that VCs select very less proposal for funding decision. The research work aims to facilitate the more efficient utilization of a special type of external funding, venture capital financing in IT sector for their growth and expansion and at the same time helps in alleviating the shortage of capital typically for this sector. Underlined assumption supported by empirical studies motivated me to study the key selection process and key investment objectives of VCs in screening process of IT firms in Indian scenario. The main goal of my research is to identify key selection aspects during screening process, key investment objectives based on social, economical and financing aspects, investigate the various dimensions of VC’s management team related with investment decision and to analyze the relationship among choice of factors and assignment of weight to each factor by different investors in the selection process of IT firms in Indian context.

1.7 Problem Statement

The concept of VC is new in India; it is not so organized as in Europe and USA. Therefore rare information is available related to VC in India. The underlined problem mentioned in the study is to determine the role of VC financing in the overall growth of IT sector in Indian economy through their selection criteria and key investment objectives related with funding decision. To assess the results and solution pertaining to mentioned problem, the following are the sub problems:

- There is a need of assessment of VC’s selection criteria and factors related to screening process for financing IT firms in Indian context.
- Determination of the key investment objectives based on social, economical and financial aspects of VCs while selecting IT firms for funding decision.
- Examining the relationship among choice of factors and assignment of weights to each factor by different investors, who are involved in VC process, during screening process of IT firms
Analysis of different dimensions of VC firm related to return expectation, VC’s compensation from the investment and financing mix for proposed funding.

To develop an extensive research methodology to collect the required data from respondents and analyze the data through statistical tool to obtain the results.

To make relevant recommendations based on analysis and interpretations.

1.8 Organization of Thesis

Chapter 1 described the introduction of IT sector, historical perspective, features of IT sector, challenges faced by IT sector, VC in IT sector, VC financing in IT sector, development of VC in India, VCs in India and current status, VC financing process, motivation behind the study and problem statement. The remaining part is organized into various sections which are as follows:

- **Chapter 2** presents literature review on selection criteria of VCs and key investment objectives towards selection of firms and research gaps.

- **Chapter 3** presents objectives, hypotheses development to understand the choice of factors and their relative relationship in terms of assignment of weights among different investors.

- **Chapter 4** describes research design including Sampling plan, sampling frame, sampling method, sampling area, sampling size, tool of data analysis.

- **Chapter 5** presents analysis and interpretation based on VC’s key selection criteria for screening process of IT firms, key investment objectives based on social, economical and financial factors. IT also includes various dimensions of VC management team related to investment decision in IT firms.

- **Chapter 6** includes findings based on 4 key selection criteria, classified into 16 variables and 4 key investment objectives based on social, economical and financial aspects, divided into 28 variables. This chapter also includes suggestions to IT firms for considering the identified variables in their business plan and to VCs for understanding the factors based on social,
economical and financial aspects and implications to the policy makers, corporate and Government.

- Chapter 7 concludes the study followed by various limitations related with the work and future scope.