CHAPTER-I

INTRODUCTION
We propose to present in this dissertation the emergence of the Information Technology Industry, also referred to as the Information Technology and Communication Industry in India with special reference to the State of Karnataka and the now well known city of Bangalore, a synonym for outsourcing from the view point of the US and other European countries of the West.

The growth, expansion, spread and the deep roots it has taken in some of this industry is now the yardstick with which the rest of the economy is measured, appreciated and evaluated. It has also marked the turning point for businessmen and industrialists to discover the resource the India as a nation embodies.

The way the is change is brought into being may be described as a historical accident or may be considered as the hidden surprise that the Market Forces continuously reveal to the world. The point is that the Market Forces are autonomous and it is this autonomy that the human intelligence is unable to appreciate and contend with.

There are two ways of looking at this: Accept and adapt or Reject and confront. Mankind has been trying both these methods with consequences appropriate to the inputs of time and space.
We in India opted for the second—Reject and confront and institute a Plan that would replace the unknown and the Invisible Hand of the Market.

We see in the events of the world how Market forces surprised everyone by creating an unusual and unanticipated demand for technical manpower in the US following the business applications of their Space Programmes and how India had the requisite manpower to step in for mutual profit and benefit.

If the events of the ‘Body Shopping’ period is documented and analysed along with the regime of restrictions, controls and regulations of business activity by the All Knowing and all Powerful Government of the day, one may strike literally a gold mine of insights.

But our purpose in this dissertation is moiré modest and humble. We mention this to indicate the hidden treasures of our experience.

We trace the growth in the export earnings under the IT industry and how it led to a series of business and trade developments involving the US on the one hand and India on the other. From export earnings we move to outsourcing phase assisted by the STP facilities.
and how seeds were sown for the planting of Indian Business in IT sector. The shyness of Indian capital and enterprise is at once replaced by the demonstrated evidence of adventure and daring by the Indian technical personnel.

The IT business and the Economic Reforms brought about by the Manmohan Singh and PV Narasimha Rao the then Finance Minister and the Prime Minister of Government of India, is now history. A history that needs careful examination so that we in India may get a true picture of the day to day existence survival challenges faced by the so-called businessmen and traders and industrialists and manufacturers of our country.

We make a presentation of all these and related aspects of economic development in India and end up with the Government and Industry working in close union as against the earlier practice of mutual distrust.

The Tenth Five Year Plan and its elaborate Policies and Programmes along with the Economic Survey which contains an objective and encouraging stock taking of the progress made and the path to be pursued in future. The emphasis on the Hardware sector, the diversification of the Software applications and the additional measures to be taken to lay a firm foundation for making Innovation a
part of business vision and policy – all this and many more are analytically presented.

The State of Karnataka is chosen for special study not only because of the birth antecedents of the research student but also because of its primary status of unusual resource endowments not excluding its history geography and sociology.

The City was in a state of readiness to welcome host, retain and absorb the requirements of an International community of technical manpower and a Government receptive to the demands of its residents, Sir.M.Visweswaraya represents this creed of administrators and Statesmen who worked with a Maharaja who had received glowing tributes from the Mahatma Gandhiji and Swamy Vivekananda.

Besides tracing the growth of more than one thousand enterprises. The Small and Medium Enterprises, we also refer to the advent of MNC’s and their pragmatic liaison with the Indian and local talent and business. Bangalore is today the hub of IT research and innovation.
In addition we also present two case histories of Infosys and the Wipro, who have made a home of this city and who are leading the IT movement not only of India but also of the world.

We expand the geography of Bangalore terminologically to include tier II cities like Mysore, Hubli and Mangalore to indicate the spread of the Industry to less expensive and dense locations thereby augmenting computerization of the country.

The inferences and insights secured in the course of our analysis are knit together into an essay on Conclusion for this dissertation.

**Importance of the Study**

The IT industry of India is not only important for the Indian economy but it is so, even at the global level. As we are going to show it in the course of our dissertation, newer and newer countries of the world are coming to realize how essential information technology is for their existence. In countries such as India, where it has entered in significant manner. Sustained attempts are being made to spread this development to every nook and corner of their economic organization. We have now begun to talk in terms of degree of computerization and methods of making information technology tools available as the third hand of a human being.
The Significance of the Study

The significance of a thing is more difficult to unravel and explain than its importance. Importance is a time bound evaluation. Reckoning the significance is to extend the time horizon into longer, larger, broader and deeper dimensions. The significance of IT is described in hyperbolic terms. It is astounded ten years ago, we didn’t anticipate the various aspects of it’s utility and we currently enjoy and take it for granted. It is true human values and human development and upliftment is a function of his own knowledge of himself, his environment and his dreams in all these aspects. It has not only played a major role but it has revolutionized the value of information.

We want to refer to a recent developments reported from South Korea. It seems they have found an answer to the melody of corruption through IT technology. It seems bidders to government tenders and to public authorities are to do their transactions only through the e-mail thus making transparency, honestly, sincerity, demonstrably possible in public transactions.

Need for the Study

Our investigation appears to have several layers and we propose to indicate a few of them here. At the outer ring if one were to describe it so is a preliminary investigation into the origins and
source of the IT Industry in Karnataka, its emergence into a player of International recognition in less than a decade or two. We see the rising rate of export earnings and the steady efflux of qualified young engineers to the US and to the Western Europe and now to all parts of the world. The employment and income effects are not only endowed with a multiplier effect but they seem to have spread effect too. The IT revolution is stimulating similar changes in other parts of the Indian economy like the manufacturing, automobile, the steel, the metals etc., besides overlapping into several service sectors like Tourism, Hotels, and Health and Pharmaceuticals. The outsourcing lid is lifted and new and new areas are slowly and steadily opening themselves out into capturing these opportunities,

But all this as we said at the beginning is the out ring. To day Indian Management is quoted at a premium in international finance markets and The Tatas and Birlas, the Ambanis and the other established entrepreneurial houses appear to have regained their original creative skill in forging business links and leading such movements. Even this is not the heart of the matter. The huge Indian market, the existence and strengthening of Democratic Institutions in the country, despite the cancer of corruption, and the unusual tolerance characteristic of the Indian people, its heritage and values
are not inferior currents that can be ignored as other things being equal.

We lay claim to a suggestion that our study points out to something deeper and hidden and universal. The strength of Market Forces and their universal character is what the IT Industry as we have documented here reveals. It isn’t Government forces that have permitted the Market forces to resurface but it is the other way round. It is the dominance and increasing attraction of their truth and validity which have compelled National Governments to follow or fall down. It is this that we would like to propose as a hypothesis if we attempt such a procedure. We hasten to add that we have no such a desire to carry a burden of philosophy on our little shoulders at this point and in the context of this dissertation.

The Market Force with its Invisible Hand is a traditional wisdom of India but not restricted to the so called Market but to the entire Universe and the Globe. We don’t have to fight against these forces in order to establish our supremacy whatever that may mean. Human efforts are to be spent to the utmost in restraining himself and watch with an alertness, a superhuman mixture of personal will and general good- to take advantage of the Market Forces as they come and go. We do not seem to have appreciated the ability to bend and
the wisdom to avoid breaking up into nothing as a prerequisite of our existence.

Accustomed as we are to perceiving things in the light of our selfish interests we are virtually immune to an influence which enlarges our perception to the unknown frontiers of the globe and its demands and properties. Even if we do so by circumscribing it to the limits of our society nation and such other progressively larger and wider groups and yet governed by the instincts of a group or a section but not the whole. We do not know the whole, its vastness and its all inclusiveness and our insignificance. We don't matter and we do no know how to accommodate this essential truth in our mind. We ignore by pass and fight against the market forces and in the same breath labour to establish a WTO.

What we need is a truly international consciousness, a global awareness which cannot be blinded by national concerns and interests. What we regard as Market imperfections is the result of a Perfection defined mainly in national terms National interests concerns and context. The dissatisfaction that the WTO proceedings and decisions give is to be weighed against the dissatisfaction caused by market imperfections.
A study of the type we have attempted in these pages—gathering of basic and primary information regarding the emergence and expansion of the IT Industry in the various States and regions of India, the renewed confidence and daring it has sustained and promoted may very well be replicated with appropriate changes. In the years to come we will have a fund of data through time on which one can experiment statistical methods to discover hidden relationships for future profit and development.

Probably a more interesting direction of thinking would be to raise the question: Why Agriculture and Farming activities haven't been influenced to the same extent as others like Finance and Banking have been. The entry of the so called “e” may revolutionise rural life and business and enable an assimilation of the IT technology to indigenous culture and conduct and bring about far reaching and hitherto unaccomplished changes and objectives. South Korea it seems has a few lessons to offer to India in banishing corruption possibilities in Governmental transactions.

There is thus a need to open the gates of research to issues and problems arising in our context and finding solutions in our own way. Some fifty years ago Prof Appleby had advised us that we should look into our problems with our own eyes and ears and other modes
of learning and select solutions from our own kit of remedies rather than depending on alien (western) perceptions and conduct. We have taken nearly fifty years to graduate to this level of understanding and the role played by IT in making this understanding possible and authoritative is by no means small or negligible; if any thing it is critical and crucial.

**Review of Literature**

A constant fear that attacks a researcher is the discovery identification and examination of literature related to his subject. The IT revolution has greatly reduced this fear into negligible dimensions. In all the three aspects referred previously the researcher is better equipped than his forefathers were. But, we would think that the provision of this facility has also deprived him of certain insights which a readymade information does not offer. But that is by the way.

As far as the IT industry is concerned the researcher problem is the mountain of information. The increasing flow of information, the widening variety of information that is inundating the feeble strength of the beginner.

The web sites that are available on the IT industry runs into literally hundreds of pages. A computer graphics text book\(^1\) of an undergraduate level runs into 50 pages and to shift material may itself
be an appropriate subject of research. The problem today is not of scarcity but it is one of abundance.

But most of these literature is technical and not immediately and directly relevant to the economic and management problems that we propose to discuss in the larger context of India and the specific area of Karnataka. There is, therefore a real need for painstaking research identification, documentation, description, explanatory analysis and accumulation of a variety of bits of information into a systematic format for economics and management students to deliver into. In fact we want to believe that the humble attempt we have made in this dissertation is a first step in the direction of providing such a data to future researchers.

Another aspect, we would like to mention in this context is the rate of obsolescence that is shadowing the innovative motivations of those engaged in these activities. Each innovation, if it does not destroy earlier data it certainly meddles it, mixed it different and reformulates it. The time sequence data, which is so important for a social scientist including the management student is either not existent or if it exist, it has only A value along with various modifications. The out revenue of one year is not strictly, precisely comparable with the sales revenue of the next year. Such is the
character and property of data we are dealing with and any attempt to subject this data into the kind of an analysis, we do for hard facts, may amount to misapplication of techniques we would like to draw our own attention into the prominence of this feature.

As far as India is concerned, there is no reliable government data on this except the one found in government records and international agencies in the context budget, world trade and balance of payments etc. Much of the information that we have presented have are drawn from private agencies specifically Nasscom, MAIT, Karnataka Chamber of Commerce, etc. The data provided by these agencies are neither regular nor continuous from the researchers’ point of view to establish an appropriate level of consistency, comparability, continuity though elementary continue to trouble and harass the diligent researcher.

**Methodology adopted**

Present study largely depends on secondary source. Also much information was collected from various websites on the topic. To make this study more scientific and simple, simple statistical tools were used to analyse the data to provide more meaningful, precise and scientific touch to the present study.
It is now a common practice to indicate the methodology governing the investigation of one’s interest as a proof of its scientific character. The process of data collection, its classification and standardization in a manner amenable for statistical testing and validation within a certain degree of accuracy and specified limits of error stipulation. While the usefulness of the practice is uncontestable one may employ them as a matter of faith rather than relevance.

When investigation is made to acquire new realms of knowledge into the focus of one’s discipline and subject the investigator as much as his guide have no ready made standardized devices to go about and continue their research. When we are trying to record for the first time the process of the formation and expansion of the Information Technology Industry in the State of Karnataka we are using a variety of tools and methods to gather information relevant to one’s investigation.

We know that the formulation of a hypothesis for its testability represents an advance in the domain knowledge to such an extent which may not have been even remotely imagined by the early entrants into the field. The Domain knowledge is so advance and developed that it offers itself conveniently for a possible definition, formulation of various hypothesis, a string of smaller and sub
hypothesis all of them put together would constitute a well defined body of knowledge.

We are not answering specific questions relating to the birth and growth of the IT Industry in Karnataka. We are laying the foundation for marking an outline into which information can be bundled and stored for further examination, processing and giving it a form academic acceptability and system of presentation. Our investigation is more in the nature of a biologist or a zoologist who senses or smells a new species of fauna or flora and roams around in the vast world of his interest to show to the world the object he has seen and sensed.

There is today, in Karnataka and India a vast literature spread around in various places not excluding the human heart and the mind information- ideas, facts, projections, estimates, possibilities, doubts and misgiving and outright incorrect views about the emergence of this activity and its usefulness to the State of Karnataka. Similarly there is an unquestioned acceptance of all that is going on in the name of IT which may not be considered suitable for the economy of the State.

A good description is the real foundation for a scientific definition. The strength of the latter in terms of the research it
provokes and promotes and ignites lies in the painstaking and exhaustive description of the ground data.

Our domain of interest is the State of Karnataka, the capital city of Bangalore which has become an adjective and a verb in IT parlance. We have collected the information available mainly from private and Industry sources. And others like the Governments and International sources, now available as web sites and put them together into a dissertation to demonstrate the path traversed by a set of people in bringing into being an IT Industry in Karnataka and Bangalore. We have thus arrived at a systematic presentation of available information which enables the reader and the future investigators, interested in this area to raise questions and discovers answers within the dissertation or formulate lines of investigation for further research. We thus make a humble plea that our dissertation enables formulation of hypothesis rather than test a given hypothesis and the methodology we have adopted is indicated at the appropriate places. We have adopted the Descriptive method of investigation.

In an industry where outputs change annually, markets shift every quarter and Amalgamation and Mergers are common business practices there is no time series data for statistical analysis. The time period is too short for their worth while application and employment.
We need to pause and consider this feature when we are talking about the Methodological issues.

**Plan of the Study**

Chapter one deals with importance of study, significance of the study, need, review of literature, methodology and plan of the study.

Chapter two deals with a historical study so to say a time chart. Calendar of events time table of achievements considered as significant and prominent in the field beginning with mechanization of computing technique, now referred to as IT revolution. Miniaturisation and packing immense energy into a thumb nail is seen in these development.

Chapter three gives a picture of the status of the IT business, industry, trade among most countries of the world constituting a digital world what is of significance to us in the immense scope that this digital world offers to India and the opportunity that lie ahead.

Chapter four presents a historical background to appreciating fully and comprehensively the IT development in USA and other top ten countries of the world. This chapter provides a mirror as it were, to examine ourselves and to profit by it of particular interest to India is the “spirit of adventure” displayed by the IBM, Microsoft and other
MNCs. It is one thing to protect ourselves against these business organizations, whose power, influence, authority and motivations. There is no discounting of this fear but equally important is the underlining the flexibility, adoptability and long-term vision of these companies.

In chapter five, we come to India, where in we spread the broad picture of Indian economic variety and creativity. The strength of private initiative and the inherent shortcomings of governmental institutions. This chapter also reveals the dominance of market force and the value, that we need to attach to this force. Had it not been market forces, India would not have seen, what it is today. A re-evaluation of the market force as a dominant social philosophy appears to demand our immediate attention.

In this chapter, we present the birth and emergence of IT industry in India, the change in the role of government as a promoter of this growth and the extraordinary alertness with which Indian technical labour force has absorbed digested and is trying to make as its own.

In chapter six, we try to show how the rulers of then Mysore state have prepared the present state of Karnataka to be a deserving recipient of International recognition and choice. A tribute, one must
pay to the former rulers of Karnataka as we now do the big IT firms of USA, India & UK.

To conclude a dissertation on IT industry, is to emphasise once again the endless continuity of human talent. The reemergence and continued dominance of market forces is illustrated by this dissertation. We anticipate that the Indians policy makers as well as the ordinary citizens will not so easily give up, this advantage which they now enjoy.

A second conclusion that emerges from our study is the need for defining innovation, more relevant and suitable to our context and re-evaluate the innovative processes, steps and the Indian IT has taken in this direction.

Reference