CHAPTER 8

MAJOR FINDINGS AND CONCLUSION

8.1 PREAMBLE

Globalisation is one of the most widely used terms in debates on economic and social development since second half of the twentieth century as it has affected people to people relation through the way they communicate in addition to their linkage to place. It has altered the way people think, work, play and conduct their business. It involves increasing interaction or integration of economic systems through the growth in International trade investments and capital flows. The advent of new technologies in the latter half of 20\textsuperscript{th} century has accelerated the process in which the role of Information and Communication Technology is considered as an important factor. The process has facilitated the dispersal of economic activities among countries which include trade in goods and services. Similarly, the free international capital flows through Multi National Corporations has brought in economic interdependence among countries world wide. This environment has enhanced the capability of international firms to separate their manufacturing, marketing and other operations and locating them in cities and towns across the world.

In the process, cities have started acquiring a new meaning and are playing a new role as they have become transnational market places for buying financial instruments and specialised services. In short, they have become engines which drive the world economy. Some of them have become
global cities whose functions extend throughout the world. The new role
played by the cities has brought about a competition among them, each city
striving to carve out a place for itself in the global economy and attract
investments. In the process, cities have come to be treated as commodities
like any other consumer goods and they are packaged, advertised and
marketed. This has necessitated a change in approach in planning from
managerialism to entrepreneurialism which has brought about a revision in
the planning approach in favour of economic interests in urban planning. The
entrepreneurial approach adopted in planning is seen to have resulted in
restructuring of cities which appeal to the global investors. This response to
the global market has lead to improvements in urban infrastructure, expansion
of tele-communication networks, technologically oriented buildings and
innovative milieu all of which contribute towards creating a global image. In
the process, there appears to be some degree of uniformity in the way the city
images are created.

This phenomenon as, observed in many cities of the world leads to the
inquiry whether Indian cities are also experiencing such changes induced
by the globalisation process. The premise for such an inquiry is based on the
fact that India has experienced rapid economic development since 1991
following the economic reforms that were introduced in the country. The
liberalisation policy adopted by the country since the economic reforms has
opened up the trade in goods and services between India and other countries.
India being a member of WTO, and a signatory to the GATS agreement, is
committed to having bilateral trade agreements with many countries in the
world. The economic benefits arising out of the trade relations between India
and other countries are obvious as evidenced from the steady increase in its
GDP growth rate. The GDP growth rate in the first four years from the fiscal
year 2004-05 to 2007-08 were 7.5 %, 9.5%, 9.7% and 9% respectively. With
an average of 7.7% witnessed during the X plan period (2002-07), India is considered to be one of the fastest growing economies.

While analysing the various sectors that have contributed to this upsurge in economy, it is observed that the contribution of the tertiary sector to the GDP has been substantial. Among various components of the tertiary sector, the rise in service sector especially in the I.T. and I.T.E.S. has been phenomenal. The fact that the share of I.T. sector to the GDP has gone up from 2% during 2002-03 to 5.4% during 2006-07 speaks of the importance of this sector in India’s economy. The growth of the I.T. sector is evident from the fact that the software exports from India has touched US $ 40 billion during the financial year 2008 and it is predicted to touch US $ 80 billion by 2012. Enquiries in this research reveal that India’s strength in I.T. sector is attributed to its quality manpower, pro-active policy frame work, state of art infrastructure and quality of service. India now accounts for 65% of the global market in off shore I.T. services and 46 % in I.T.E.S.

An investigation on the factors that have contributed to the growth of I.T. industry in India has revealed, that the policy adopted by central government towards computerization in 1984 and the specific I.T. policy introduced since 1998 to promote the I.T. industry, have been instrumental for the phenomenal growth of I.T. industry in India. Besides the existing human resource, the follow up of the I.T. policies lead to a quantum jump in expanding and enhancing the tele-communication infrastructure and the built infrastructure. These are said to be the factors that have played a dominant role in sustaining the growth of the I.T. industry. The employment opportunity generated and the revenue generated are found to be the factors in favour of promoting the I.T. industry. The I.T. industry is said to have provided direct employment to 2.01 million during 2008 and it is predicted to touch 8 million by 2012.
Through the I.T. policy, the central government offered many economic incentives to attract the I.T. industry in India. To provide an enabling environment, the central government created the STPI and SEZ concepts which are applicable throughout the country. Many state governments adopted these polices and as a result of it, the I.T. industry had been able to make rapid progress in a short span of time.

This background has lead to the inquiry with regard to the requirements of the I.T. industry and the role of cities in catering to them. It was necessary to understand the extent to which, the I.T. sector impacts the cities of the India and the adjustments they have had to make to attract the I.T. ‘industry’ as they are called in India. According to a study, I.T. industry being a city based industry is concentrated in cities and 90% of the present employment in I.T. is captured within seven ‘leader cities’ of India, thus emphasizing the important role played by cities. Bengaluru, Chennai, Hyderabad, Kolkata, Mumbai, National Capital Region(New Delhi) and Pune are termed the leader cities. Among these, five are capital cities of states. In other words, these are the front runner states which have capitalised the potential of the I.T. industry and an analysis of the reasons for the dominance of these states has brought out the fact that this is primarily due to the I.T. policy of the respective states.

Almost all these states are found to have projected their respective capital cities and have taken measures to strengthen the physical infrastructure. They have offered attractive fiscal and physical incentives to entice the MNCs in I.T. sector to set up their establishments in their respective states and to promote PPP in building the necessary physical infrastructure. The competition among cities has resulted in an innovative approach in urban planning aimed at attracting investments. The city administrators which include the planners have had to frame suitable investor
friendly urban development policies to facilitate creation of necessary built environment for the knowledge workers, on fast track mode.

The manner in which the newly emerged I.T. industry has manifested itself in the cities which are being projected and in the process how the urban development has coped is the focus of this research. As a case study, Chennai Metropolis, one of the big metropolitan cities of India and capital of Tamil Nadu was taken up for investigation. This research was aimed at understanding the relationship between economic factors and urban development in order to establish how any specific development fits into a larger perspective with I.T. industry as a case study. The manifestation of I.T. industry was studied not only with regard to the work spaces created for the work force but also its cascading effect on other built forms leading to large scale urban development. This research set forth certain research questions and identified the objectives through which the answers could be found. The findings of this research are summarised in the following sections of this chapter.

8.2 MAJOR FINDINGS

8.2.1 Manifestation of Information Technology industry and the influence of the Information Technology industry on the form and directions of growth of Chennai Metropolis

The research has brought out the fact that Tamil Nadu is one of the early starters, in anticipating the potentials of the I.T. industry as early as 1997. The well developed infrastructure which the state enjoys and the sustained policy of the government in promoting industrial activity has enabled it to take the lead in projecting the state for promoting I.T. industry. The state is found to be keeping pace with the economic progress made by the country since the economic reforms and the rise in GSDP bears testimony to
this. The study has brought out the similarity between economy of the nation and state with regard to the rise in share of the service sector. The contribution of the I.T. sector in terms of export in software since 1997 has been phenomenal and it is attributed to the exclusive I.T. policy of the state. It is found that while the policy has been in tune with the nation’s policy by and large, the successive governments have sustained the policy and periodically reviewed the same to respond to the requirements of the industry. Even though the policy had been revised in 2002, 2005 and 2008, the thrust on increasing the share of I.T. industries in national software production and enhancing the employment generation has remained consistent.

The policy of the state is found to be largely responsible not only for attracting I.T. industries with many fiscal incentives but also for creating the necessary infrastructure which includes built environment for the employees in I.T. industry. With regard to built environment, it is found that by and large that emphasis has been towards creation of workspaces for the large workforce in I.T. industry even though a mention has been made regarding provision of housing as part of I.T. related developments in the I.T. policy. The urban development policy that followed the I.T. policy however gave importance only to the creation of built environment for I.T. offices and offered many incentives for their creations. It was brought out in Chapter 4 that the I.T. policy 2002 recognises the role of cities in wealth generation for the state and decides to launch special drives for making them vibrant, innovative and customer focused. The latest ICT policy 2008 is found to take note of the need for promoting integrated development through master plan, providing housing for the workers in I.T. and I.T.E.S. and creation of satellite towns. However, the translation of these into the urban development policy is yet to be seen.
Even though there was a concerted effort to promote I.T. industries in Tier II and Tier III cities in addition to Chennai the capital city, the research brings to light the fact that not only have multinational I.T. companies but also private developers have chosen Chennai for establishing their campuses. From a detailed investigation of the I.T. parks which are being proposed, it is found out that nearly 95% of the total proposed built up area of 6.73 million Sq.m is concentrated in Chennai metropolitan area.

While tracing the urban developments in Chennai Metropolitan Area on account of I.T. industry, it is found that three players have played a key role. The I.T. companies have taken the lead in terms of establishing their campuses initially. The government is found to have played a pro active role in establishing not only I.T. parks (for providing ‘plug and play’ environment to I.T. companies) but also in undertaking large scale land intensive developments for the benefit of I.T. industry. The private developers’ role in terms of creating the built spaces in the form of I.T. parks accounts for maximum percentage of I.T. related developments. The key factor which has influenced the participation of private sector is found to be the market friendly or investor friendly urban development policy of the planning authority, namely, CMDA. As explained in Chapter 5, it is evident that the amendments made to the development control rules of CMDA to attract private sector participation in the creation of I.T. related developments, mostly pertaining to work spaces, are the result of the I.T. policy of the state.

The permissibility of I.T. parks in any of the six land use zones and additional FSI benefit to the tune of 50% are found to be important incentives which have attracted the developers of I.T. parks. More importantly, the permissibility of MSB for I.T. related developments any where in CMA is found to be instrumental in many I.T. related developments in the peripheral areas. The enabling mechanism created through ELCOT for making the
planning permission process hassle free and investor friendly is another reason which is observed to have attracted private developers. It is found that the change in attitude of the planning authority in favour of I.T. related developments as an exception has enabled many private developers to shift their focus towards creation of I.T. parks. As a result, many urban development initiatives are found to have taken place in Chennai Metropolis. Though the urban development policy adopted by CMDA has facilitated this, in effect, it is the I.T. policy has been the catalyst for the transformation.

An investigation undertaken by the researcher has revealed that of the 191 I.T. parks for which NOC has been issued by the ELCOT since 2003, as many as 186 I.T. parks with a total built up area of 6.73 million Sq.m are under consideration in CMA and of these nearly 5.76 Sq.m of developments is through the initiative of private sector. The study points out that I.T. related developments are witnessed both in the core city and the peripheral areas. By the volume of activity that has taken place in a comparatively short span of time since 2003, it is found that the I.T. parks have become a new component of urban development in Chennai Metropolis.

A scrutiny of the location of the I.T. parks has revealed that more than 50 % of them with a total plinth area of nearly 3.69 million Sq.m are under consideration in the I.T. corridor which is situated towards the southern part of Chennai. The Old Mahabalipuram Road which connects Chennai and Mahabalipuram is found to have become a hub for I.T. related activities. The study points out that the initiatives of the I.T. companies in choosing this location for establishing their respective campuses has been instrumental in the declaration of this corridor as the ‘I.T. corridor’ of Chennai by the government. Availability of land, pollution free atmosphere, and connectivity to city, airport and East Coast Road are found to be the reasons for declaration of this stretch as I.T. corridor. The declaration of I.T. corridor has enabled
automatic land use reclassification in favour of I.T. related developments in the linear stretch of 500 M initially on either side of OMR for a linear stretch of nearly 20 KM within CMA boundary. This, along with the incentives offered in the development control parameters is found to have attracted many I.T. related developments through the initiatives of the private sector. The research also brings to light that I.T. related developments are witnessed beyond the CMA boundary along OMR, thus highlighting the importance of OMR. The move of the government to extend the I.T. corridor and undertake the second phase of I.T. Expressway up to Mahabalipuram is found to be an important factor in catapulting developments on the southern corridor.

From an analysis of the location of the I.T. parks under consideration, it is found that I.T. related developments are spread all along the entire stretch in all the six villages through which the OMR passes. Of the total 97 of I.T. parks with 3.69 million Sq.m of I.T. built space under consideration in the entire corridor and its surrounding regions, it is found that along OMR alone, there are 72 I.T. parks with a total plinth area of 2.2 million Sq.m. This proves that the I.T. corridor is the most attractive location for the I.T. industry in CMA. The decision to widen the then existing two lane OMR a six lane into I.T. Expressway and implementation on a fast track mode through PPP is found to be an important factor for accelerating developments in the I.T. corridor. Among the villages in the surrounding regions of the I.T. corridor, Taramani and Perungudi are found to be attractive due to their proximity to Chennai city as they border the city and have direct accessibility from the I.T. Expressway. As many as 16 I.T. parks with 1.25 million Sq.m of built space are under consideration in these two villages alone.

By observing the intensity of developments witnessed in the form of many I.T. parks along the I.T. corridor, it is possible to come to the conclusion that the I.T. industry has played a major role in the expansion of
Chennai along the Southern corridor. Expansion of Chennai along this corridor was not anticipated at the time of preparation of First Master Plan. Even though this belt was identified for industrial land use during review of the FMP in mid 80s, no significant developments were witnessed till late 90s.

From the study, it is found that the Second Master Plan for the CMA by CMDA in 2008 recognises the developments which have taken place along the I.T. corridor and has accorded the status of ‘Areas of special character’ to them. The I.T. corridor is found to be included as one of the new corridors wherein the expansion of Chennai is to be accommodated along with the proposal of a new town at Thirupporur. The landuse strategy proposed for the I.T. corridor and the strategies suggested for strengthening the transportation infrastructure are found to convey the intention of the planning authority in intensifying I.T. related developments in Chennai Metropolitan Area along the I.T. corridor.

The TIDEL park established by the Government at Taramani which is situated at the northern end of the I.T. corridor and SIPCOT I.T. park at Siruseri on the south which is situated beyond the CMA boundary are found to have anchored the I.T. related developments along the OMR and its surrounding regions. The I.T. expressway is found to have given the I.T. corridor the status symbol. With the second phase of the I.T. expressway on the anvil, the I.T. related developments can be expected to continue beyond Thirupporur.

This research has brought out that besides the I.T. corridor, I.T. related developments are witnessed in two other stretches predominantly, namely, Mt. Poonamallee road and G.S.T. road in CMA. Together, these two belts are found to absorb 16 % of the total I.T. related development in the state with a total plinth area of nearly 1.09 million Sq.m. However, the study points out that developments witnessed here are not as distinct as in the I.T.
corridor. Mt. Poonamallee road which was known for industrial developments is found to accommodate the I.T. related activities in recent times. Connectivity by means of road network to two important arteries, namely, GST road and Poonamallee High road, availability of lands, electrical infrastructure, connectivity to air port and proximity to many suburban developments are found to be the factors responsible for opening of this belt for I.T. related developments. The land use relaxation, FSI benefit and MSB status are additional factors that are found to have influenced I.T. related activities.

GST road which runs parallel to the suburban railway network along the South West corridor was one of the corridors identified as part of the FMP for accommodating the expansion of Chennai. This corridor was known for many residential suburbs and industrial developments. I.T. related developments are of recent origin in this corridor. Factors such as connectivity by means of road and rail network, linkage to airport, availability of housing in the suburban areas along this corridor are found to be the reasons for I.T. related developments in this corridor. Establishment of Mahindra City near Chingleput along GST, an integrated township project undertaken by through PPP model and inclusion of I.T. related developments as integral part of the development are found to be instrumental factors which have catapulted I.T. related developments along this corridor.

Besides the above developments witnessed in three corridors, the study points out that substantial quantum of I.T. related developments are contemplated in the Industrial Estates in CMA. The I.T. policy of the state had classified I.T. as ‘industry’ and laid emphasis towards utilising the existing infrastructure in industrial estates. This is found to be the factor which has facilitated the transformation from manufacturing activities to I.T. and I.T.E.S related activities. The permissibility of MSB for I.T. buildings
with FSI up to 3.75 for I.T. related developments is found to be the most important factor for the transformation witnessed in Guindy Industrial Estate located within Chennai city, Vikram Sarabhai Intronics campus located at Perungudi near I.T. corridor and Ambatur Industrial Estate located at West Chennai. This research has brought out the transformation taking place in Ambattur Industrial estate in large scale on account of the large industrial plots. The developments witnessed in the form of a cluster are found to be in contrast to the linear form developments observed in I.T. corridor and Mt. Poonamalle road. From the trend observed in the estate, it is predicted that Ambattur Industrial Estate will undergo a total transformation due to the intensity of developments taking place.

From an investigation of the number of I.T. SEZs notified in Tamil Nadu, it is observed that SEZ form of developments for I.T. industry is another dimension which is gaining ground in recent times. The study indicates a decline in proposals in the form of I.T. parks in favour of I.T. SEZs. The withdrawal of concessions to STPI units in I.T. parks and the financial package offered to units in I.T. SEZs are found to be factors for the shift in focus towards I.T. SEZs. While it can be seen as a welcome move, since SEZs can be designed as integrated developments incorporating housing and other social infrastructure, there are concerns regarding the vacancy that may arise in the existing I.T. parks. The study also points out that quite a sizable number of the notified I.T. SEZs are located in Tier II cities which is an indication that Tier II cities are taking off. Among the tier II cities, Coimbatore is found to accommodate maximum number of I.T. SEZs. The policy of the government to establish at least one I.T. SEZ in each of the Tier II cities is found to be the catalyst for attracting private initiatives on I.T. SEZs.
The study also brings out that among the 27 I.T. SEZs proposed in Chennai Metropolitan Area and its surrounding regions, the I.T. corridor accounts for 16 of them with nearly 500 Ha under consideration and many I.T. companies and private developers have taken the lead. The pro active role of the government in establishing the Knowledge Industry Township in Sholinganallur as I.T. SEZ and allotment of large plots which qualify for I.T. SEZ in Siruseri I.T. park are found to be reasons for the large number of I.T. SEZs in I.T. corridor. The field study carried out indicates that construction activity in many of them is rapidly progressing.

From this research it is found that I.T. related developments hitherto seen in the form of many campuses of I.T. companies, pro-active moves of the government and the market driven I.T. parks by many private developers have resulted in expansion of city in new and stretches / pockets which were not anticipated earlier. Among the three directions where the I.T. related developments are significantly felt, the I.T. corridor assumes importance due to the scale and intensity of developments taking place. It is found that the developments in the I.T. corridor are predominantly dictated by the I.T. industry. It is evident from the study that the growth of Chennai along the south of Chennai is on account of the I.T. industry which employs new generation work force. From the study, it is concluded that expansion of Chennai along the south corridor is entirely on account of I.T. sector. I.T. related developments witnessed in the form of I.T. parks and I.T. SEZs in Mt. Poonamallee road and GST road indicate that they are fast emerging as alternative locations. The I.T. SEZ proposals contemplated in the Sriperumbudur industrial corridor on the west is a new trend and is likely to catapult I.T. related activities on the corridor hitherto not known for I.T. industries.
The research also brings to light that IT related developments have not only influenced the direction of growth of Chennai Metropolis but also the form of Chennai particularly in the peripheral areas. The exception given for the IT buildings with regard to the height and the globalised architecture of the IT buildings have made them very distinct. Being multi storeyed in nature, they are in sharp contrast to other developments taking place in the peripheral areas. This is more distinct in the IT corridor where developments are witnessed in close proximity on either side all along the linear stretch. The IT corridor with its new 6 lane IT expressway and glittering IT buildings is found to have given Chennai Metropolis a new image which is in sharp contrast to the existing developments.

From the study, it is found that at the rate at which the developments are taking place in the form of IT parks, the IT corridor alone can accommodate about 525,000 direct IT employees. If the IT SEZs are taken into account, an additional 1 million can be accommodated. This raises the question whether all the spaces created for IT offices would have takers. As per the latest ICT policy of the state, the projected demand of employment in Tamil Nadu is around 1 million by 2011 which is optimistic considering the fact that the state proposes to capture 25% of the nation’s IT production. There are already signs of huge vacancy and there has been a demand from developers for releasing the spaces sanctioned as IT offices for non IT activities. If a shift takes place from IT parks to IT SEZs because of economic benefits, the vacancy level would increase. This research has pointed out that the ‘supply’ of built space generated is based on market perception and there appears to be a mismatch between economic projections and the built infrastructure required. Notwithstanding this, it is predicted that expansion of Chennai along the South corridor is bound to intensify since IT related developments are also going to have cascading effects on other forms
of built environment for residential, commercial and other social infrastructure needs of the large work force in I.T. industry.

8.2.2 Restructuring of Chennai Metropolis on account of Information Technology sector

This research has brought out that the physical manifestation of I.T. industry in Chennai Metropolis is visible not only in the peripheral areas but also in the core city. In the process of accommodating the requirements of I.T. industry and promoting it, certain restructuring has taken place. The study has brought out the distinct differences between the restructuring that has taken place in the core and peripheral areas. The investigation of the I.T. corridor which was taken as a case study for the peripheral areas (since more than 50% of I.T. related developments are concentrated in I.T. corridor) has revealed that the restructuring is witnessed in the form of change in character of land use, promotion of land intensive developments and strengthening of the transportation infrastructure network.

The declaration of a 300 M wide belt initially on either sides of OMR as industrial land use zone or the subsequent increase in the width to 500 M and declaration of I.T. corridor are found to be important factors which have contributed to the restructuring of land use in the I.T. corridor. The urban development policy adopted as a consequence of the I.T. policy is found to have made an impact on the land use in the I.T. corridor due to development of large number of I.T. parks. The change in development control parameters with regard to the land use policy has facilitated the conversion from non urban to urban use in the form of I.T. parks. The proactive role of the government in establishing TIDEL park for providing a ready made environment for I.T. companies has encouraged many private initiatives to follow the model adopted.
With the delineation of I.T. corridor in terms of spatial configuration in the SMP with more lands brought under Industrial land use, it is only logical to expect more changes in the land use. The study brings to light that apart from the private initiatives which have been instrumental in the land use restructuring, the government has also played a major role. The large scale land intensive developments undertaken by the government in the form of SIPCOT I.T. park at Siruseri and Knowledge Industry Park at Sholinganallur are found to have facilitated the restructuring of land use on a large scale and have intensified I.T. related developments in an integrated manner.

With regard to the restructuring of traffic and transportation network, the study points out that the government has played a direct role. The widening of the existing OMR as a six lane I.T. Expressway and widening of Medavakkam – Sholinganallur road as a follow up of Action Plan report for Thirupporur I.T. corridor are found to be the first major restructuring of transportation network undertaken by the government for providing better connectivity to the I.T. corridor. SMP has suggested Medium Term transportation schemes such as, Rapid Transit Ways along OMR, Taramani link road, Pallavaram – Thoraippakkam road and certain link roads to connect OMR and ECR. Long term measures suggested, include extension of MRTS from Tiruvanmiyur to Mahabalipuram along OMR and elevated highways along OMR. When these proposals are taken up for implementation, the traffic and transportation network in the I.T. corridor and its surrounding regions is likely to get restructured, thereby intensifying the developments further. The anticipated developments in the I.T. corridor and its surrounding region have drawn the attention of the planning authority to suggest measures towards strengthening the other infrastructure such as water supply, drainage, telecommunication and electric power supply. Those are to be taken care by the respective government authorities.
The linear form development observed in the I.T. corridor is found to be primarily on account of the policy to declare lands up to 500M on either side of the OMR in the lands falling under the CMA and the 6 lane I.T. Expressway implemented from Madhya Kailash up to Siruseri. The Buckingham canal on the east of OMR which runs parallel to OMR has accentuated the linearity further. The I.T. expressway is found to have become a new identity of Chennai. This has resulted in I.T. related developments almost along the entire stretch not only up to the city boundary but also beyond in anticipation of extension of I.T. Expressway beyond CMA boundary. The permissibility of MSB with FSI up to 3.75 as an exception for I.T. buildings has made them distinctly different in their form not only due to the height but further, due to the scale and intensity of developments. Also the aesthetic appeal of the newly evolved globalised architecture of the I.T. buildings has enabled the change in the city’s image in the I.T. corridor thereby lending an imageability to Chennai Metropolis.

The study points out the increasing emphasis on I.T. SEZs which are likely to be the future form for I.T. related developments. With nearly 500 Ha of land notified as I.T. SEZ in the I.T. corridor, the I.T. related activities are likely to intensify the activities further and alter the visual character not only due to size of plots which are large but also due to the composite developments anticipated in them. The developments are likely to restructure the infrastructure needs and transportation network and the land use pertaining to other related needs of the large community that is likely to settle in I.T. corridor.

This research has pointed out that the I.T. industry has also manifested in the core city. This is evident from the fact that 17% of the total I.T. related development in the state with a plinth area of nearly 1.22 million Sq.m. is concentrated in the core city of Chennai. The well developed
physical and social infrastructure available in the core city is found to be the attraction for the I.T. companies to choose Chennai. The rate at which the I.T. related developments are taking place at present, it is estimated that the core city could accommodate nearly 175,000 direct employees of I.T. industry. In the process of accommodating the requirements of the I.T. industry, the core city is found to have undergone certain restructuring, but they are different in character from the peripheral areas. The restructuring is witnessed mostly in the form of changes in land use and built environment.

The study brings to light the rapid transformation of the character of Guindy Industrial Estate from manufacturing activities to I.T. related service activities. The total extent of built up area under consideration is found to be around 270,000 Sq.m which can accommodate 38,500 employees in the I.T. industry. The I.T. policy 2002 of the state which laid emphasis on utilisation of existing infrastructure in industrial estates is found to be an important factor which has been instrumental in effecting the transformation of the industrial estate. The locational advantage the estate enjoys and the decline in industrial activities in the estate are the additional factors which have accelerated the transformation process. By considering the volume of I.T. related activities taking place in the estate on the initiative of private sector it is predicted that the industrial estate will turn in to an exclusive I.T. hub within city. Located along one of the important arteries of the city, namely the inner ring road which is well connected to GST road, this new hub with its new architectural images can be expected to boost the image of core Chennai.

Besides the developments witnessed in the Guindy Industrial estate, I.T. related developments are witnessed in the core city in the form of many isolated I.T. parks distributed in different parts of the city. The study points out that the total extent of built up area under consideration in the I.T. parks is around 950,000 Sq.m and the built space generated can accommodate
136,000 employees in the I.T. industry. On account of such large inclusion in
the cityscape restructuring of land use is observed in the form of conversion
of under utilised but commercially potential urban lands exclusively for I.T.
parks. The land use relaxation and FSI benefits offered to I.T. buildings vide
amendments to the development control rules of CMDA are found to be the
factors that have attracted the private developers to initiate I.T. related
developments despite higher land cost in the core city. The easy marketability
of the built space is an added attraction. The study with regard to the
distribution of I.T. parks in the core city brings to light their concentration is
in South and Central Chennai. Factors such as good transportation network,
proximity to well developed residential districts and availability of social
infrastructure are found to the factors in favour of South and Central Chennai.
As they are distributed over many parts of the city and merge with the
urbanscape, the form generated by the I.T. buildings is not discernible as in
the I.T. corridor.

The study has also revealed that I.T. related developments are taking
place in the existing built environment in the core city which do not consist of
exclusively designed I.T. buildings. The conversion of built environment
available in the form of commercial spaces for I.T. related activities is the
other form of restructuring that is witnessed in the core city. An investigation
of the location of all the STPI registered units has revealed that Chennai city
accounts for nearly 75% of the total number of STPI units registered in the
state. 88% of them (763 units) are located in buildings not exclusively built
as I.T. buildings. Districts such as T. Nagar, Teynampet, Nungambakkam,
Greens road and Guindy which are well connected by means of good
transportation network are found to be attractive locations for such STPI
units.
Concurrent with the I.T related developments in the core city, are many real estate commercial developments of unprecedented scale in the form of shopping malls, entertainment complex, multiplexes, star hotels etc. Though they cannot be attributed entirely to the I.T. sector, the presence of large affluent work force with better purchasing power and exposure to global culture in Chennai is found to be instrumental in planning of these new forms of development which are purely market driven. With many large scale complexes spread over different parts of the city, the cityscape is likely to be restructured.

From the study, it is found that due to I.T. industry, the core and periphery are getting restructured and the differences are obvious. With the focus shifting to I.T. SEZs from I.T. parks further changes can be anticipated. The requirement of large parcels of land for I.T. SEZs is likely to shift the operations to the peripheral areas due to limitations in availability of large parcels of land in the core city. If the economic benefits for STPI units are withdrawn from March 2011, a change is likely to take place in the utilisation of stand alone I.T. parks and the I.T. related activities in non I.T. buildings.

8.2.3 Effect of Information Technology industry on other built forms

This research has pointed out that the I.T. policy of the central and many state governments have recognised the importance of creation of work spaces in the form of I.T. parks for promoting I.T. industry in India. In the case of Tamil Nadu, it is found that even though the I.T. policy 1997 had identified the need for creation of I.T. parks incorporated with housing facilities, the urban development policy that was adopted by CMDA as a follow up of the I.T. policy gave preference to work related spaces only and the incentives offered in the form of land use relaxation and additional FSI were limited only towards them.
This research has pointed out that the encouragement given to I.T. related developments has resulted in private sector participation in creation of many I.T. parks both within the core city and the peripheral areas of Chennai. It is found that the Action plan for Thirupporur I.T. corridor prepared by CMDA was the first attempt towards making assessment with regard to housing infrastructure and social infrastructure. Even though the strengthening of transportation network in the form of widening of OMR into a six lane I.T. Expressway and widening of Sholinganallur - Medavakkam road were taken up for implementation as a result of the Action Plan Report, it is found that no tangible action has been taken towards promoting housing and social infrastructure.

The interim report of Development Plan of MM Nagar – Thirupporur Area is found to be the next attempt by CMDA at the instance of the government towards preparation of a Comprehensive Development plan for South & South West corridor of Chennai. Even though the report is found to have recommended the proposal of an integrated Township near Thirupporur which is outside CMA boundary to cater to the housing and other requirements of the workers in the I.T. industry in the I.T. corridor, the proposal was not pursued by the government.

The SMP prepared by CMDA for Chennai Metropolitan Area in 2008 has taken cognisance of I.T. developments that have taken place in the I.T. corridor from Taramani to Semmencheri and the spill over effects on Pallavaram – Thoraippakkam road. To give further boost to I.T. related developments, CMDA has delineated the I.T. corridor in terms of spatial configuration which is found to make more land available for the work space for I.T. industry. It is also noted that the SMP stressed the need for developing new town near Thirupporur located on OMR not only to meet the demand for I.T. office spaces but also to address the housing needs. It is observed that
unlike the thrust and emphasis on New towns which were given in the FMP, SMP does not spell out in unambiguous terms regarding development of new town and the details are wanting. A clear shift in emphasis is found with the planning authority playing a facilitator role rather than a proactive role in this regard.

This research brings out clearly that with emphasis only towards creation of work spaces of those in I.T. industry, the built environment for other uses, namely, housing and other social infrastructure have not been adequately and comprehensively addressed by the planning authority and it has been left to the market forces. In the absence of such infrastructure, it is found that the private developers have seized the initiative towards addressing the cascading effects of the industry and have capitalised the potentials offered by the I.T. work force.

An investigation of the residential developments taking place in and around the I.T. corridor, which was taken up as a case study, has revealed that in recent years nearly 21,400 residential units have been proposed through private initiatives towards capitalising the potentials of the highly paid knowledge workers in the I.T. corridor. It is found that despite no special incentives for residential developments, private developers have undertaken many residential developments which are mostly in the form of ground plus three storeyed structures. However, it is observed that the developments are not integrated. With regard to the residential developments noticed beyond the CMA boundary, it is found that they are in contrast with the developments within CMA. They are found to be in the form of MSBs with higher FSI as they come under the jurisdiction of the Director of Town and country Planning. The study has pointed out that, of the total development of nearly 17,000 housing units in the OMR directly, nearly 11,000 units are beyond CMA. With the Second Master Plan allowing MSB form of developments for
all types of buildings in entire CMA, the form of future residential developments is likely to alter drastically and there by increase the housing stock within CMA.

The developments are found to be market oriented intended to attract the direct employees of the I.T. industry and the housing requirements of indirect employees who are in large number have not been addressed at all. In terms of location, it is found that the OMR is the most attractive location for the residential developments despite the fact it has been reserved exclusively for I.T. related developments. The direct accessibility through the I.T. Expressway is found to be an important factor for some of the major residential developments in OMR. From a developer’s perception, the visibility and address are the factors that are considered to enhance the marketability of the project.

With regard to the commercial developments, it is found that they are also initiated by private developers. They are conceived as independent developments in different locations along OMR to cater to the entire I.T. community working in the I.T. corridor. They are large in scale and proposed as integrated developments incorporating shopping malls, business centres, entertainment centres such as multiplexes and leisure areas. The sustenance of these complexes would depend on the population deciding to reside in the I.T. corridor and its surrounding regions.

On the social infrastructure front, it is found that through the initiatives of the private sector, many corporate hospitals have come up recently in the I.T. corridor and its surrounding regions. They have been planned with health care facilities of international standards bearing in mind the requirements and affordability of the corporate sector in I.T. industry. With regard to the educational infrastructure, it is found that in two large scale residential developments, an innovative approach of tying up with established
educational institutions is attempted. Similarly, leisure activities such as clubs and recreational centres are integrated as part of the residential developments. However, the study brings out that there are no proposals on the anvil, of large scale open space and recreational activities both from the planning authority and the private sector. The proximity to East Coast road which is the recreational corridor of Chennai is found to be the factor for the absence of large scale recreational activities in the I.T. corridor.

From this research, it is evident that the I.T. industry is having its cascading effects on built forms for other needs such as housing, commercial and social infrastructure and they are being addressed entirely by the private developers. In comparison with the volume of built environment created towards I.T. work spaces, the other built forms particularly with regard to residential units are found to be grossly inadequate. The Action Plan report of Thirupporur I.T. corridor estimated that by 2011, the population in I.T. corridor would be 400,000 which is based on the assumption that 50% of the workforce would settle in the I.T. corridor. With the thrust given by ICT policy 2008 to enhance the employment generation to 1.1 million by 2011, it is reasonable to assume that majority of them would be accommodated in the I.T. corridor. Based on projects on the anvil towards creation of built space for I.T. industry both in the I.T. parks and I.T. SEZs, it has been established that in the I.T. corridor alone about 1.5 million employees would be working in the I.T. sector. Even if 1/3rd of this work force decides to settle in the I.T. corridor, the population that is likely to settle is around 2.25 million. The effort of the private sector as witnessed at this stage is found to be hardly sufficient as the estimated requirement of housing units in the next few years would be 500,000. This research brings out the gap between ‘supply’ and the projected demand. The study points out that this gap between supply and demand warrants a rational assessment of the land requirement for housing in close proximity to the work area and the manner in which the same is to be
addressed. It is also necessary to explore various options of accommodating the new generation of knowledge workers which includes integrated township and self-contained neighbourhoods all along the I.T. corridor and in the adjoining areas.

8.2.4 Response of planning mechanism in meeting the demands of Information Technology industry

The literature survey carried out and presented in Chapter 2 brought out the changing paradigms in planning in the era of globalisation on account of the shift in role of the cities. In order to invite investments from Multi National Companies, the planning had to take an entrepreneurial approach and restructure the cities to enhance their capability in the global market. In the process, there was a shift in planning approach from managerialism to entrepreneurialism.

It was brought out in Chapter 3 that service sector, particularly I.T. sector, is having its impact on some of the Indian cities and that the states are seen competing with each other for a share of income through software exports. The states have projected their capital cities. This research has brought out the correlation between the growth of I.T. industry and the role of the cities in capitalising the potential. To cope with the demands of the I.T. industry and to effectively compete in the global market, these cities have had to equip themselves by strengthening the infrastructure. The infrastructure includes telecommunication network, service networks, transformation network and physical infrastructure which include new buildings. The study has pointed out the role of the I.T. policy of the central and state governments in framing policies towards fiscal and physical incentives. The I.T. policy of the front runner states have been found to be instrumental in influencing the urban development policy pertaining them towards creation of built environment and infrastructure required for the I.T. industry.
In Tamil Nadu, it is observed that the planning mechanism had to respond to the demands of I.T. industry as early as 1998. Taking clue from the I.T. policy 1997 with regard to the creation of I.T. parks and the incentives offered in the form of land use relaxation and additional FSI benefits up to 50%, the CMDA, planning authority for the Chennai Metropolitan Area responded by effecting certain amendments to the Development Control rules then in force for CMA which are applicable for I.T. related developments pertaining to workspaces. In order to encourage participation from private sector towards creation of I.T. parks, relaxations were offered with regard to the land use, FSI and height. As an exception, I.T. buildings could be built in any of the six land use zones namely, Primary residential, Mixed Residential, Commercial, Institutional, Light and General Industrial zone. CMDA had taken the precaution of not permitting I.T. buildings in Special and Hazardous industrial zone and Open Space and Recreation Zone however. The I.T. buildings were granted an additional FSI up to 50% permissible under each land use zone. The planning authority, however introduced certain preconditions such as minimum plot extent of 2000 Sq.m and minimum abutting road width of 18 m for availing these incentives. It is found that these preconditions were introduced as a safeguard to protect the sanctity of residential land use zones and to discourage developments in the core city.

However, it is found that this precondition has enabled the I.T. buildings the MSB status since the criteria for MSB were minimum plot extent of 1500 Sq.m and minimum abutting road width of 18 m. By default, all the I.T. buildings which seek to avail concessions in development control parameters became entitled for MSB form. By virtue of this, it is found that all I.T. buildings became eligible for 1.5 times the maximum eligible FSI of 2.5 thus making it 3.75. In addition to this, it is found that I.T. buildings built any where in the CMA could be built as MSB which was an exception. As per the rules prevailing then, MSBs were restricted within city limit. The changes
incorporated in the development control rules have had an impact on I.T. related developments particularly in the peripheral areas. Hence, this first response from the planning authority CMDA is seen as an entrepreneurial approach adopted aimed at attracting more developments in I.T. At the same time, the planning authority is also found to have exercised some caution in protecting the residential areas in the core city and preventing I.T. related developments in Special and Hazardous Industrial zone Land use zones and Open Space and Recreational Land use zone.

To invite private sector participation in I.T. related developments and make the planning clearance process hassle free, it is found that the CMDA has streamlined the process of issue of planning permission. However since I.T. related developments were entitled for certain incentives, CMDA had recommended ELCOT as the certifying authority and based on the NOC from them, the application for planning permission was entertained. To quicken the process of issue of planning permission, CMDA constituted as a separate division to give priority to I.T. buildings. This move of the planning authority is seen as a market friendly approach.

The I.T. policy gave ‘industry’ status to the I.T. sector and laid emphasis on utilization of existing infrastructure in industrial estates for I.T. related developments. Translating the same in the land use policy, the CMDA had permitted I.T. buildings in industrial land use zone. As per the Development Control rules in force then, the maximum FSI was restricted to 1.0 in Light Industrial Zone and 1.25 General Industrial Zone. Granting an additional 50%, FSI the maximum FSI eligible would have been 1.5 and 1.87 respectively only. Further, it is to be noted that flatted industries were not permissible as per the development control rules in force then. For I.T. buildings in Light and General Industries land use zones, these conditions were waived as a special case. It is found that the pre conditions fixed for the
I.T. buildings in the form of minimum plot extent of 2000 Sq.m and minimum abutting road width of 18 M had made most plots in large industrial estates qualify for MSB. By virtue of the same, they became eligible for 3.75 FSI. Therefore, the approach taken by the authority in granting more FSI through MSB rules in the industrial land use is found to be an innovative and investor friendly approach aimed at attracting more participation from private sector in the creation of built infrastructure. From the study, it is found that this approach has enabled the transformation of the Ambattur and Guindy Industrial estates which has given a new lease of life to industrial plots where the manufacturing activities had declined.

With regard to the developments taking place in the I.T. corridor, it is found that the Planning Authority has initiated many steps as a response to promote I.T. related developments. The declaration of I.T. corridor and identification of OMR for widening as a 6 lane I.T. Expressway are found to be the early moves of CMDA to channelise the growth of I.T. sector in South Chennai. The SMP has identified the need for a new town near Thirupporur as a strategy to decongest Chennai and provide a long term solution to cater to the requirements of the I.T. industry. The SMP has also included the I.T. corridor as an ‘area of special character’ as the planning norms are different for them. All these moves of the planning authority convey the priority accorded to the I.T. related developments.

The urban development policy adopted by CMDA for promoting and channelising the growth of I.T. industry is found to have been directly influenced by the I.T. policy. In the process, the planning authority is found to have taken certain pro-active measures in framing a suitable land use policy, providing the transport infrastructure and creating an enabling environment towards creation of built environment for I.T. office spaces. These decisions
are found to be the response of the planning authority in realizing the objectives of the I.T. policy.

The study however points out that the planning mechanism has not been able to assess the pace of developments as they are left entirely for the market forces to determine. Further, it is found that the incentives provided in the development control rules are found to be only towards creation of workspaces and there has been no attempt to comprehensively address the issues and rationally assess the housing and other needs of those working in the I.T. industry. The research has brought out that while the supply in terms of built space for I.T. office space is in excess, it is far less for the residential developments. The developments are not found to be balanced.

From the study, it is also found that while the policy to promote private sector participation has been achieved to a large extent, no attempt has been made to address the issues holistically. The research also has brought to light that despite the intention of the government to promote I.T. related developments in Tier II and Tier III cities, the developments have concentrated in Chennai Metropolitan Area. From the research, it is found that market oriented approach in planning leads to lopsided urban developments which is more evident in the I.T. corridor.

8.3 SCOPE FOR FURTHER RESEARCH

This research was an attempt to find how urban planning in India gets fine tuned in the changing context of globalisation which is impacting many cities of the world. As a case study, the I.T. industry which is one of the key sectors shaping the economic growth of the country was taken up and the industry’s manifestation in one of the biggest metropolitan cities of India, namely, Chennai was taken up for a detailed investigation.
This research however gives scope for further research on the following:

i) The dispersal of manufacturing activities facilitated by the globalisation process has brought many Multi National Companies to shift their manufacturing operations to India. For instance, Chennai is considered the ‘Detroit of India’ with car manufacturing giants Hyundai, Ford and BMW setting up their operations around Chennai Metropolitan Area. The impact of the manufacturing sector on the city’s urban development calls for a research to understand the various forces which can influence the growth of the city.

ii) This research has brought out that I.T. related developments are concentrated in CMA despite the efforts of the government in promoting Tier II & III cities. The reasons for concentration and importance given to Chennai may be investigated further in order to channelise future course of action in promoting Tier II & III cities and distributing the benefits of the I.T. industry to the rest of the state. The lessons learnt in promoting I.T. industry in Chennai Metropolitan Area could be utilised while diversifying the I.T. operations in Tier II and Tier III cities.

iii) This research has brought out that with the emphasis shifting to SEZs, large parcels of land are under consideration in I.T. SEZs. As per the I.T. policy of government, many benefits are offered to I.T. SEZs and the concessions offered to I.T. units in other built forms, whether I.T. parks or in other places, are to be withdrawn from March 2011. Further research in this regard is required to assess whether migration would take
place to I.T. SEZs from existing I.T. parks and in the event of such migration what would happen to the built spaces vacated by I.T. activities.

iv) This research has revealed how the economic policy has driven urban development with specific reference to I.T. sector. The market oriented approach is found to have resulted in excess supply in terms of I.T. office spaces. The study has brought out the gap between demand and supply with regard to the housing needs of those engaged in I.T. industry. One of the reasons identified is the lack of special incentives to developments other than work spaces for I.T. industry. The indirect employees who are said to be nearly three times more than the direct employees have not been considered in planning. Further research is required on the methodology to be adopted for scientifically assessing such requirements of the I.T. industry in order to ensure balanced development.

8.4 CONCLUSION

This research has brought out that I.T. industry, which is an offshoot of globalisation and economic reforms introduced in the country since 1991, is having a large impact on Chennai Metropolitan Area, which is taken as a case study. The urban development policy pertaining to CMA underwent a drastic change as per the policy guidelines laid down in the I.T. policy. The manifestation of the industry has been felt clearly in the I.T. corridor although peripheral areas and the core city have also contributed in catering to the I.T. industry. The pro-active move of the Government in developing I.T. parks in Chennai, land intensive developments in the form SIPCOT I.T. park and Knowledge Industry Township and infrastructure developments undertaken have encouraged private sector participation in a big way.
The entrepreneurial approach adopted in planning in giving incentives for the I.T. sector has resulted in disproportionately large volumes of built spaces related to work environment raising a concern whether all of them would be occupied. Another concern is whether the I.T. SEZ form of development would prove beneficial or detrimental.

The innovative approach adopted by the government has no doubt resulted in utilization of the existing infrastructure in Industrial areas. With the shift in manufacturing sector towards dispersal of activities globally, the traditional manufacturing sector which was intended to promote indigenous talents has lost its steam. This has been capitalised well by the I.T. industry since it is classified as ‘Industry’ and land which is an important resource is available in the industrial estates. The transformation of these for I.T. has not only generated economic activities but also boosted the image of these districts which enjoy locational advantage.

This research has also brought out that in the process of accommodating the I.T. industry, the core and periphery have undergone restructuring. In the peripheral areas, the restructuring has taken place in terms of land use, land development and transportation network etc., which has benefited the I.T. industry in a big way. In the core city, transformation has occurred to Guindy Industrial Estate and Ambattur Industrial Estate (which is on the fringe of city) which are under going total transformation on account of I.T. industry. The impact of the I.T. related activities on other parts of the city is not discernible as the form of I.T. buildings merges with other developments. However, the large commercial complexes which are on the anvil suggest that the core city is still the most preferred destination, despite many of the inherent drawbacks such as high land cost, traffic congestion and over crowding.
The research also has brought out that the market oriented approach in planning has led to exclusive attention to work related spaces only. The residential, commercial, and social infrastructure needs which are the cascading effects of the I.T. Industry have been left entirely to the market forces. The field investigation carried out on the I.T. corridor has revealed that the supply is far less than the projected demand and there is a need for addressing this issue for sustaining the growth of I.T. industry. The market oriented approach to urban development seems to have resulted in developments which are piecemeal in nature.

This research, which started on the premise that globalisation has its impact on cities concludes that it is quite evident in the case of I.T. industry. Even though it is too early to state whether the Indian cities have attained the status of being called ‘Global cities’, by virtue of the functions performed in these cities towards providing advanced services to developed nations of the world, they have gained international recognition.

The I.T. industry has provided an opportunity to Indian cities to get adapted to the requirements of global corporations and compete effectively in the global market. The forces of globalisation are evident in the form of infrastructure and real estate development of international style, branded show rooms, retail spaces of large volume. The study reveals that Indian cities are coming of age and the I.T. industry has provided the necessary thrust same. In short, the I.T. industry has transformed the face of some of the Indian cities.

The economic activity generated by the I.T. industry is bound to have trickle down effect on other sectors also. Even though the urban developments are not evenly distributed, I.T. industry has enabled transformation of the image of Indian cities at least in certain parts. If globalisation is about image making as an essential exercise for attracting global investments, the I.T. industry has definitely given the necessary inter-
national image to Indian cities. The time has come to learn the lessons from the experience of I.T. industry if investments from other sectors are to be expected. To sustain the economic growth, balanced urban development is required and the role of planners has become all the more important. Tackling the forces of globalisation for the benefit of larger community and planning for a balanced, equitable and inclusive development is going to be the challenge for the future planners.