

# BUILDING BANGALORE'S COMPETITIVE ADVANTAGE

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A CASE FOR COLLABORATION BETWEEN  
CORPORATIONS AND THE CITY

MBE graduate thesis at TU Delft

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# Colophon

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## **P5 Thesis Report**

23 June 2017

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## **Building Bangalore's Competitive Advantage**

**A case for collaboration between Corporations and the City**

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## Abstract

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Cities are the backbone of the economy in most countries, serving the corporations they house and enjoying the benefits of their business. They are also a beacon for many who flock to these urban areas in the hope of better employment opportunities and quality of life. Cities are thus constantly growing and evolving in an effort to create a competitive advantage that can attract and retain more business. The pattern of city growth can be traced back to several factors that influence the location decisions of businesses to cluster. Service sector led cities witness the most prominent impact in real estate development, given that their economy is heavily reliant on business networks and economies of agglomeration. As such, these cities also bear the drawbacks of being popular migration destinations, including overconsumption of resources, crowding and high costs. Creating an environment that can benefit corporations, residents and the Government, while still tackling the negative externalities of agglomeration is crucial to maintain a city's competitive advantage. This tension is researched through an empirical study of the factors that have established Bangalore as the Silicon Valley of India. The dynamics between the private and public sector is therefore explored, making a case for more cross-sector collaboration in order to sustain Bangalore's competitive advantage as an IT destination.

*Keywords: competitive city advantage, business location decisions, urban structure, negative externalities of agglomeration, cross-sector collaboration, Bangalore*

# Preface

---

I was born in and spent most of my adult life in this chaotic, dynamic and vibrant metropolis called Bangalore. This thesis therefore sits very close to my heart, as I have witnessed first-hand, the changes that have brought the city to where it is today. It is with the intention of exploring the dynamics of real estate development that I have spent this year researching, and it has been an enlightening experience to understand this from an academic perspective.

I appreciate all the efforts that my mentor Ilir has taken in helping me formulate and streamline my research. Working with him has given me skills that I am sure I can carry forth in my professional endeavors. Ilir, thank you for addressing my trivial doubts, and for supporting me with all the academic backing that I needed. I also want to thank my mentor Herman, for being so patient and supportive during our preliminary discussions about the thesis, as well as all throughout the process. More often than not, he was able to understand my ideas better than I could express them, and I think that is what makes him a great mentor.

A special mention about two young alumni from TU Delft. Nikita, who has given me hours of her time to talk about my thesis, putting me in touch with several persons that could assist me professionally. Nikita, as always, working with you has been inspirational. Karan, who helped me formulate my thesis even while he was still working on his. Karan, your guidance has been great. Conducting research in India would not have been possible if it were not for all the interviewees who have been so generously flexible with their time. I want to take this opportunity to thank all of them for being willing to participate, and for being forthcoming with their opinions.

I have been incredibly lucky to have both my parents genuinely interested and supportive through this year. Their years of professional knowledge in the field of the built environment has been instrumental in helping me bring my thesis this far. My mother, for her unmatched inter personal skills which helped me with interviews back home, and my father for his incredible eye for detail which has helped me refine my research. Thank you both for always being there, and letting me interrupt your ritualistic afternoon naps and midnight movie marathons.

Thank you to my housemates for helping me to stay focused and burn the midnight oil through all these months. Of course, I also want to thank a special group of classmates who have displayed solidarity not just in times of research discussions, but in times of saturation as well. Without you all, I would not have been able to have as much fun as I have had working on my thesis.

I hope this thesis will be helpful to someone trying to explore or understand the topic further, as many students and researchers works have been helpful to me.

Malvika Mundkur

23 June 2017



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## Executive Summary

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Geltner and Miller have identified two forces that influence where businesses locate- centripetal and centrifugal forces. Centripetal forces such as pure external economies, thick labor markets and linkages cause cities to form and activities to concentrate, while the centrifugal forces cause cities to decentralize. Centrifugal forces or nuisance effects (Pigou, 1948) such as pure external diseconomies, high land rents and immobile factors that oppose the Marshallian externalities or centripetal forces. Several theories such as the Central Place Theory (Christaller, 1966), Highest and Best Use of Land theory, Bid-Rent theory (Alonso, 1964) explain how land values determine the spatial distribution of functions in a city. As explained in 2.1 , it is evident that businesses location decisions within the city heavily affect its urban structure and resources, making corporate real estate a field with immense potential and weight.

Within a strained environment of rapid urbanization and negative externalities of agglomeration, the research aims to bring to light the contribution of businesses and the Government to a city's competitive advantage. Governments realize the driving role that businesses play in the economic future of their cities. 4 determinants of competitive advantage of regions have been identified- factor conditions, demand conditions, related and supporting industries, and firm strategy (M. E. Porter, 1990). The three sources of competitive city growth (World Bank, 2015) are expansions of existing firms, creation of new firms and attraction of investors (2.2.2 ). The search for urban competitiveness should ultimately aim at sustaining and enhancing the welfare of the actors that are already operating and living within the city's boundaries (Srinivas, 1997). Consequently, cities are competitive if they are able to cope with the negative externalities of economic growth.

The hypothesis being tested via the thesis is thus that *the manner in which a city develops is heavily dependent on the agenda of businesses and their location decisions*. The hypothesis leads us to a deductive research, with the main research question- *“How can an environment of competitive advantage in Bangalore be maintained while tackling the diseconomies of agglomerating businesses?”*

In order to answer the question, a qualitative research is conducted, using Bangalore as a case study. Three themes explored in this study are business location decisions, competitive city advantage and

collaborative planning (Figure 27, Figure 30). A detailed description of the research design is presented in Chapter 3. The results of the research present the various geographical, political and institutional factors that have contributed to Bangalore's position as the IT capital of India, further elaborated in 4.2 . The research also highlights that despite Bangalore being a preferred destination for several international and domestic companies, the city is plagued with the negative externalities of agglomerating businesses, including congested roads, water shortage and power failures.

The consequence of these dynamics on real estate development and city competitiveness is also studied across global cities via a desk research explained in 2.4 . Researchers have asserted that Governments, businesses and civil society are unable to tackle the issues of exploding land prices, traffic congestion, environmental degradation and social exclusion by themselves (Koppenjan & Klijn, 2004). Based on the direction and motive for collaboration, the Global Cities Business Alliance (GCBA) have classified collaboration into 4 models- top down city-led, city-led convening, business-led and direct operational models (2.3.3 ). Within the framework of GCBA (Figure 14), city-led interactions refer to those instances where Government authorities at the city level drive change, and strategic planning is a long-term plan that enables the organization to pursue its vision.

A representative city for each collaboration model mentioned above was selected for the desk research, to understand how cross-sector collaboration has affected the city's urban structure and competitive global position. Each city has adapted its approach to collaboration to better serve its economic, environmental and social interests. In general, it is observed that there is a tendency for devolved city governments to facilitate dialogue with leading business associations. This approach enables that a consensus is reached between all relevant stakeholders on the future growth of the city. This study is further elaborated in 2.4 .

The framework of collaboration developed by the Global Cities Business Alliance is further utilized to analyze the type of collaboration that exists in Bangalore. The results from interviews across public and private sectors have also assisted in this assessment. By linking the type of collaboration to the observed urban challenges in Bangalore, the research highlights the missed windows of opportunity for sustainable land development in the city.

## Findings

### *Theme 1: Business Location Decisions*

*What factors influence the location decisions of businesses in Bangalore at the macro level?*

The interview data has indicated several drivers prompting IT companies to locate in Bangalore. These include the skilled labor pool from universities, catalyst effect of existing IT agglomerations, industrial and economic policies such as FDI, SEZ and Bangalore's salubrious climate. These IT Agglomerations are often on the periphery of the city because costs of real estate are too high at the center. Furthermore, IT companies require a very large floor space, and space is a huge restriction within the city.

### *Theme 2: Competitive Advantage*

*What role does competitive advantage play in determining the collaboration employed in planning the city?*

The influence of the Government on the pursuit of competitive advantage has a direct relation to the rate of business interest and employment growth. The Center communicates with industry representatives to develop industrial policies, while the State has been instrumental in promoting Bangalore's image as an IT hub. This has helped promote the competitive advantage of Bangalore as an IT hub. However, since the City Government is left out of this entire process, there is a disconnect in Bangalore's competitive advantage being reflected in its planning agendas.

### *Theme 3: Collaborative Planning*

*What are the changes seen in Bangalore when the private sector (or public sector) leads urban planning?*

Planning in Bangalore is largely influenced by business agendas and private developers, with minimal influence of the City. Furthermore, the fragmented City government and overlapping jurisdictions leave room for corruption, and a Government that can be easily swayed by private interests. Together, these reasons have led to urban sprawl and related infrastructure woes. There have been instances of collaborative planning, with each level of the Government interacting at different intensities with the private sector (Figure 48). The three-tiered system of Government in India has therefore resulted in a hybrid model of collaboration between sectors (Figure 47). Overall, the findings have indicated that collaborations, when they occur, have resulted in positive outcomes for both parties involved.

## Research question

In view of the crumbling infrastructure problems prevalent in a city that is home to the world's largest IT companies, the thesis draws a relation between private sector agenda, and public sector approach to gaining competitive city advantage. The research question *“How can an environment of competitive advantage in Bangalore be maintained while tackling the diseconomies of agglomerating businesses?”* implies a dual challenge for Bangalore- maintaining an environment of competitive advantage, as well as tackling the negative externalities of agglomerations. The table below summarises how each aspect can be addressed for the case of Bangalore.

	To maintain competitive advantage	To tackle negative externalities	Both (maintain while tackling)
1	Devolved city government with increased steering capacity	Local Economic Development (LED) *	Prioritise degrading city over pure economic gain
2	Investment in infrastructure and regeneration *	Infrastructure before commercial development *	
3	Investment in research and educational institutions	Compact urban development	
4	Strategies for business retention through economic or industrial policies *	Restricted greenfield conversion	Collaboration between businesses and City

\*Requires cross-sector dialogue

The Central and State Government have shaped the industrial environment to attract foreign investment and promote domestic growth of software companies. The series of reforms can be traced back to the 70's, including export, FDI, infrastructure and operational reforms- all successfully implemented with the intention of creating a globally competitive city. Despite the intention of gaining competitive city advantage, the Government has overlooked basic provisions that support business growth. When assessed against the framework of Global Cities Business Alliance, Bangalore does not make the mark of effective collaboration at the City level. This situation is a threat to maintaining the competitive advantage of Bangalore.

## Conclusion

Addressing the nature of competitive advantage within the context of a degrading city, the main research question is answered by reflecting on the finding that Bangalore lacks collaboration at the City level. Therefore, to tackle the negative externalities that have resulted from agglomerating businesses, more collaboration between the private and public sector is needed, especially in matters of real estate development.



Furthermore, the lack of dialogue between planning authorities at the City level and approval authorities at the State level has further exaggerated infrastructure and development issues. This has resulted in sprawling, piece-meal development, with infrastructure that cannot support existing or future developments. From the perspective of competitive advantage, there is a looming threat that Bangalore can lose its status as a premiere city for IT investment, chances are that the companies will move to other states altogether. Therefore, in the interest of the State, it is necessary not just to tackle the negative externalities that have resulted over years of growth, but also invest in other cities that can ease the pressure on Bangalore.

With the numerous companies locating in these SEZ's, they provide a conducive environment that delivers agglomeration economies such as pure external economies like knowledge spillovers, thick labor markets and market size effects. The economy that accompanies these agglomerations is highly sought after by all levels of the Government. At the same time, the negative externalities of IT agglomerations such as traffic congestion, crowding, lack of solid waste management, affordable housing and sufficient power supply are rising. Therefore, it becomes crucial to enhance collaboration between the sectors at the City level.

# CHAPTER 1. RESEARCH DEFINITION

---

1.1 Introduction

1.2 Key Acronyms

1.3 Framework

## 1.1 Introduction

---

*"The raison d'être of large cities is the increasing return to scale inherent to large labor markets." - Alain Bertaud*

With metropolitan cities becoming popular destinations for those seeking employment and a good quality of life, the population influx and subsequent growth in some of these cities has been unprecedented. This rapid rate of urbanization has put a strain on the demand for land in cities. Due to reasons that include, but are not limited to, restricted space and planning laws, problems such as sky rocketing real estate rents and land prices, along with crowding and pollution, plague many of these cities. Pull factors such as good infrastructure and work opportunities make cities promising places to live in. These characteristics cause an influx of businesses, which often choose to locate in a region referred to as the Central Business District (CBD).

The prediction of settlement patterns as a result of location decisions has also been explored in the agricultural rent theory (Von Thunen, 1826), which explains that those goods with greatest demand and highest transport costs should be produced closer to the city. The decisions of firms to locate in a specific region are further explained by the concept of economies of agglomeration (Marshall, 1890). Agglomeration economies are a result of centripetal forces that include thick labor markets, knowledge spillovers and infrastructure sharing which encourage firms to cluster. However, the pattern of clustering can cause crowding and consequent decline in the living conditions in cities owing to high levels of pollution, failing infrastructure and even crime. For example, in the 1950's, London observed a sharp decline in its population as residents migrated to the suburbs in a period referred to as the Winter of Discontent. Therefore, equal and opposite push factors like congestion, pollutions, unaffordability, etc. are equally prevalent in cities and shape their economic geography (Krugman, 1999). This dynamic of push and pull thus morphs the urban form of cities.

The purpose of this report is to investigate the impact of real estate decisions of both the Government and corporations needs to be understood in terms of how decisions from each perspective are expressed in the urban form and costs of occupation in the city. The main question of the research is thus-

*"How can an environment of competitive advantage in a city be maintained while tackling the diseconomies of agglomerating businesses?"*

Note:

In this thesis, crowding is defined as the psychological effect that the density of a city has on a person. Density is expressed both in terms of built up area and in terms of population.

The questions are directed in an empirical research that will begin by understanding the agglomeration of businesses and their location decisions. Subsequently, the factors that have influenced these decisions in terms of policy development are mapped via a theoretical research. Literature reviews and comprehensive city studies will contribute in understanding the structural changes affecting urban growth. This is observed over a period to observe the structural changes in the economy and political environment that have contributed to the change in urban structures of these cities. Interviews and previous research then provide data about how interaction takes place in the city case study, and what a given interaction type yields for the city. This research therefore tests the hypothesis that the manner in which a city develops is heavily reliant on the agenda of businesses. The dynamics between the public and private sector is thus analyzed in terms of the effect on realization of planning, costs and crowding in service sector led cities.

This report begins by introducing the thesis, and defining the framework that has guided the research in Chapter 1. Chapter 2 will elaborate relevant concepts to the research, explored theoretically. Using the theoretical background thus achieved, Chapter 3 will then introduce the research methodology by describing the scope and research questions that have driven the exploration. Next, Chapter 4 will report the case study of Bangalore, followed by an evaluation of the findings from this case study in Chapter 5. Chapter 6 will conclude by proposing possible ways sustainable real estate development in Bangalore by promoting cross-sector collaboration.

## 1.2 Key Acronyms

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BATF	Bangalore Agenda Task Force
BDA	Bangalore Development Authority
BMRDA	Bangalore Metropolitan Region Development Authority
CBD	Central Business District
CDP	Comprehensive Development Plan
DoE	Department of Electronics
FDI	Foreign Direct Investment
GoI	Government of India
HP	Hewlett-Packard
IT	Information Technology
ITES	Information Technology Enabled Services
ITIR	Information Technology Investment Region
JnNURM	Jawaharlal Nehru Urban Renewal Mission
MoUD	Ministry of Urban Development
NASSCOM	National Association of Software and Service Companies
NIUA	National Institute of Urban Affairs
PPP	Public Private Partnerships
RHDHV	Royal HaskoningDHV
SEZ	Special Economic Zones
STPI	Software Technology Parks of India
MNC	Multi-national Corporation

## 1.3 Framework

Figure 1 gives an overview of the research framework in the form of the report's structure, and can serve as a guide while reading the report.

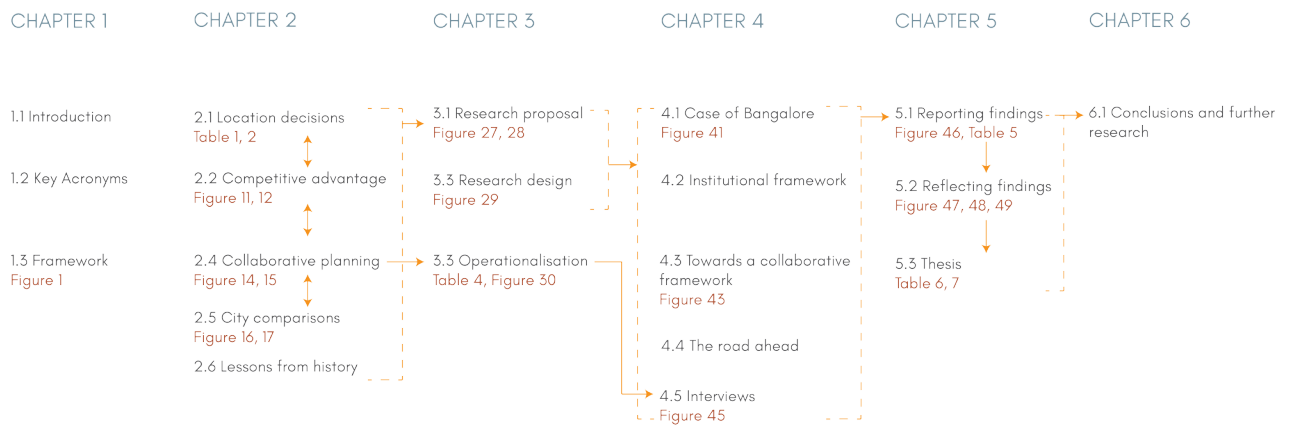


Figure 1: Report framework (own illustration)

The theoretical framework is expanded within the context of the urban form of a city. Two major fields that can influence the urban form are thus chosen, and categorized into the private and public sector. Within the private sector, the concept of agglomeration economies is reviewed by understanding the factors that drive business location decisions, in addition to the factors that cause businesses to disperse. In order to understand how the economy of a city is stimulated for businesses, the public sector will then explore the concept of competitive cities and their respective planning policies or regulations. To support the thesis, the impact of the urban form is also explored by reviewing literature on urban economics and agglomeration diseconomies.

Three themes are explored through literature- business location decisions, competitive advantage and collaborative planning. A literature review of the concepts allows an understanding of which of these concepts are most tightly related and impacted by changes in the other. The study will assist in drawing a correlation between concepts and establish a direction of causality. Some of the concepts are briefly described in Chapter 2.

# CHAPTER 2. THEORETICAL UNDERPINNINGS

---

2.1 Business Location Decisions

2.2 Competitive Advantage

2.3 Collaborative Planning

2.4 City Comparisons of Governance and  
Business Locations

2.5 Lessons from history

2.6 Summary

## 2.1 Business Location Decisions

Traditionally, business districts have characterized the spatial patterns of a city. This pattern is termed as the urban form, and can be categorized based on the manner in which land use has been distributed around the Central Business District (CBD) of the city. This idea of distribution of business and land use was first put forth in the Central Place Theory (Christaller, 1966) described in section 0 and agricultural rent theory (Von Thunen, 1826).

More often, cities are characterized by other centers than the CBD. The first model of a polycentric city was developed by Fujita and Ogawa (Fujita & Ogawa, 1982). Their assumptions lead to the formation of multiple business districts. These are sometimes referred to as urban sub centers or neighborhood business districts (NBD's) (Geltner, Miller, Clayton, & Eichholtz, 2001).

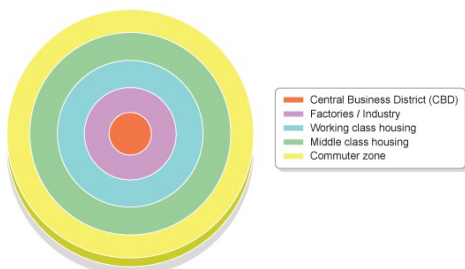


Figure 2: Concentric ring model (Burgess, 1925)

Section 2.1.1 and 2.1.2 describe the various ways in which the urban form of a city can be determined, based on land use distribution and density patterns respectively.

### 2.1.1 Land use as a determinant

#### Concentric

The basic monocentric city model suggests that similar uses tend to locate at similar distances from the center of the city, resulting in concentric rings of land uses around the CBD. As the name suggests, a monocentric city consists of one central point, which is often the CBD (Figure 2). The city thus expands from the CBD in rings with different land uses (Park Robert, Burgess Ernest, & McKenzie Roderick, 1925).

#### Sectoral

Developed from the concentric model, the sector model distributes land uses in sectors that radiate from the CBD (Figure 3). These sectors develop along transportation corridors, which are the focus of growth (Hoyt, 1939).

#### Multiple nuclei

In contrast to the models described previously, the multiple nuclei model proposes that multiple nodes (Figure 4) develop in a city based on the services offered. As a result, the growth originates from several independent nodes rather than a single CBD (Harris & Ullman, 1945). This model is based on the assumption of increased movement in the city due to car ownership.

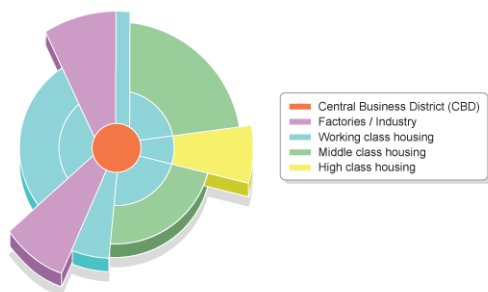


Figure 3: Sectoral model (Hoyt, 1932)

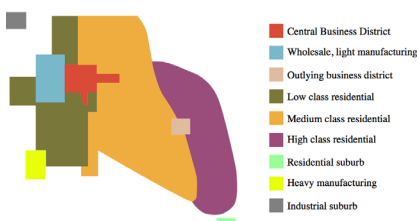


Figure 4: Multiple nuclei model (Harris & Ullman, 1945)



### *Garden city*

Garden cities were intended to be self-contained communities, containing proportionate areas of residences, industry, and agriculture (Howard, 1898). In this model, the city is planned around a central garden depicted in Figure 5, and contained by a green belt located within 7km of this garden. It is a form of monocentric city structure, where the size and population of each city is limited.

### *Edge cities*

An edge city describes a concentration of business, shopping and entertainment activities outside the traditional CBD as seen in Figure 6, in an area which was previously residential or rural area (Garreau, 2011). Each city is self-sufficient and can function independently, but link together to form a larger metro network.

#### 2.1.2 Density and trip patterns as a determinant

The models explained thus far use land use distribution to categorize urban structure. On the other hand, urbanist Alain Bertaud from the NYU Stern Urbanization Project uses three other measures to describe a city's urban structure as seen in Figure 7- the distribution of population, the trip patterns, and the built up density. The theory of urban spatial structures elaborates that cities can be structurally classified as polycentric or monocentric, and major flows as organized or disorganized. Flows can be classified as primary- reflecting main road and transit corridors converging towards main employment and population areas, and as secondary- often linking sub centers. Cities with a higher level of reliance on public transit tend to be monocentric with a higher level of organized flows, while cities depending more on the automobile tend to be polycentric with a more disorganized structure of flows (Bertaud, 2001)

In order to identify the urban structure of cities in this thesis, a combination of the above-mentioned determinants will be employed - land use and population distribution with the built up area density. This will help identify nodes of concentration of people and businesses, thereby allowing identification of the clusters across the city (as described in 2.4 and 4.1.1 ). The pattern of trips is not included as this assumed to be more a result of what drives urban structure than what determines it.

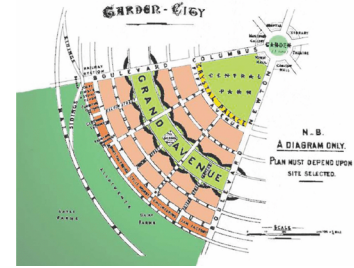


Figure 5: Garden city model (Howard, 1898)

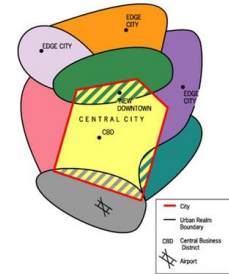


Figure 6: Edge cities

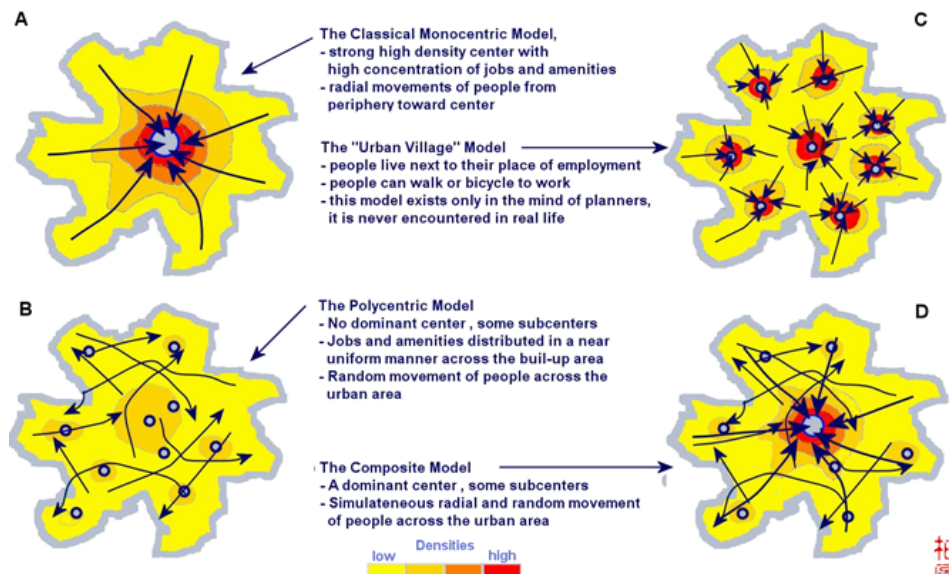


Figure 7: Urban spatial structures (Bertaud, 2001)

### 2.1.3 Circular causation of location choices

In essence, the above-mentioned theories describe how economic activity is arranged within the fabric of the city in such a way that each activity can take maximum advantage of a particular location. This usually involves maximizing revenue, while minimizing costs, or the cost to benefit ratio. For example, an industrial manufacturing plant will prefer to locate near well-developed transportation corridor to minimize transportation costs. A retail unit chooses to locate close to their customers, to increase their sales. A technology company prefers to situate themselves near similar firms to facilitate knowledge sharing and collaboration. These tendencies describe the urban form based on the geography of economics- the manner in which businesses choose their locations based on what they can gain from said location. Together, these advantages are referred to as economies of agglomeration, and are the result of centripetal and centrifugal forces.

According to Geltner and Miller (2007, p. 43), the factors which cause cities to form and activities to concentrate are the centripetal forces which include economies of scale, economies of agglomeration and positive location externalities. The factors which cause cities to decentralize are pollution, congestion, crime, high intra-urban transport costs and high rents (Geltner et al., 2001). These are referred to as centrifugal forces.

The core-periphery model of the New Economic Geography (Fujita, 2012), based on the von Thunen model where the manufacturing lies at the core and agriculture at the periphery of the urban areas. The model explains how the manufacturing sector agglomerates into a single region due to the centripetal force generated through a circular causation of forward and backward linkages between manufacturers and suppliers (Fujita & Krugman, 2004). The proximity of customers (forward linkages) and of suppliers (backward linkages) may generate positive externalities for entrepreneurial clustering. As firms cluster, local markets grow. These market size effects foster geographical concentration. Once the economy created by a circular causation of centripetal forces has grown enough for the outer reaches of the hinterland to become sufficiently far from the center, it becomes worthwhile for some economic activities to defect, giving rise to a new city (Fujita & Krugman, 2004). This process repeated many times over gives rise to many more cities and economic centers, like the edge cities explained in 2.1.1

#### 2.1.4 Agglomeration economies

Table 1: Sources of agglomeration (adapted from Rosenthal and Strange, 2004)

	Microfoundation	Paper
1	Natural advantage	Kim (1999) Ellison and Glaeser (1999)
2	Input sharing	Holmes (1999)
3	Labor market pooling	Diamond and Simon (1990) Kahn and Costa (2001)
4	Knowledge spillovers	Jaffe, Trajtenberg and Henderson (1993) Rauch (1993a) Moretti (2000)
5	Home market effects	Davis and Weinstein (1999)
6	Consumption	Tabuchi and Yoshida (2000) Glaeser, Kolko and Saiz (2001) Waldfogel (2003)
7	Rent seeking	Ades and Glaeser (1995) Henderson (2003b)

The examples of industrial plants and technology companies above illustrate that the location decisions of firms are heavily influenced by the economies of agglomeration. Three sources of agglomerations have been put forth by Marshall as knowledge spillovers, thick labor markets and backward-forward linkages associated with local markets. Further sources of agglomeration have since been by other researchers as seen in

Table 1. This section will briefly describe the sources of agglomerations, or the ‘microfoundations’ as identified by Rosenthal and Strange (Rosenthal & Strange, 2004) from various researchers.

#### *Natural advantage*

This refers to the advantages that are local to particular location like the availability of natural resources, good climate etc. Natural advantages are therefore the physical characteristics of a location that make it suitable for the localization of an industry.

#### *Input sharing*

The input sharing typically refers to the cost effectiveness when the input or raw material is supplied at a lower cost due to the presence of other firms nearby, resulting in scale economies. Therefore, a firm that is a part of an agglomeration is able to produce goods at a lower cost than an isolated firm is. Furthermore, the ‘Folk theorem’ (Scotchmer & Thisse, 1992) aptly explains the geographical distribution of economic activities due to the increasing returns of scale. Increasing returns to scale occurs when output increases by a larger proportion than the increase in production inputs.

#### *Labor market pooling*

The availability of skilled persons and a large labor pool positively influences the concentration of firms in an urban area. The labor pool may be tapped into by similar or diverse industries.

#### *Knowledge spillover*

Knowledge spillover is the exchange of knowledge between individuals belonging to different organizations, either from like or diverse industries, generates positive outcome, these are external knowledge spillovers. It is often accomplished through face-to-face contacts. Internal knowledge spillovers can also occur within an organization via grouping of functions.

#### *Home market effects*

This refers to the returns to scale wherein an industry locates itself strategically in such a way that it is close to its consumer market, thereby reducing transportation costs. This implies a link between market size and exports.

#### *Consumption*

A large city offers greater consumption possibilities for businesses in four ways- goods or services may not be available in another city, large cities may offer aesthetic charms, large cities can provide public

amenities not available in smaller cities, dense cities allow for a greater speed of interaction (Vern Henderson & Thisse, 2004).

#### *Rent seeking*

This refers to the behavior of firms where they locate in a particular geographic area to be close to the politically influential. It can be explained in terms of gaining control of land by lobbying the Government for personal gains.

Agglomerations are therefore formed by centripetal forces such as thick labor markets, knowledge spillovers etc. that pulls businesses together. The geographical concentration of a business enhances the productivity, innovation and sector export of a particular good (M. E. Porter, 1998), thereby prompting many firms to actively agglomerate.

#### 2.1.5 Negative externalities

Aside from the economies of agglomerations that cause businesses to cluster, centrifugal forces like high transport costs, high land costs, congestion etc. cause businesses to locate away from each other. Such diseconomies of agglomeration are referred to as the ‘nuisance effects’ of agglomerations (Pigou, 1948) and often cause firms to disperse.

Table 2 gives an overview of the centrifugal forces that oppose the centripetal forces or Marshallian externalities.

Table 2: Forces affecting geographic concentration (adapted from Krugman, 2004)

Centripetal forces	Centrifugal forces
Pure external economies	Pure external diseconomies
Thick labor markets	Land rents
Market size effects (linkages)	Immobile factors

#### *Pure external diseconomies*

Pure external economies are the Marshallian externalities caused by knowledge spillovers in concentrated economic areas. In opposition, this concentration causes congestion and pollution.

The Industrial Revolution of the 1800’s was a turning point for civilization, bringing unprecedented growth, technological advancement and economic development to several countries in the West. The scale of urban expansion in these cities, in what we call developed countries, has since stabilized. However, in developing countries, growth is still accelerated and cities are densifying while growing simultaneously, to cope with expansion. This trend has caused a combination of densification of existing business districts, and the

rise of second and third districts, new campus city center locations, new innovation districts and the redevelopment of old industrial locations into new corporation and enterprise hubs (Clark & Moir, 2014).

#### *Land rents*

Thick labor markets also cause agglomerating businesses, due to the availability of skilled professionals. Thus, increased density of both population and businesses causes a subsequent increased demand for real estate, thereby pushing up land rents.

With limited supply of land, costs rise drastically, soon becoming too expensive for business locations and in many cases unaffordable for residents. A classic example of rising real estate costs can be described by the example of London, a city that is infamous for its highly unaffordable residential real estate. Leading economist Paul Cheshire explains that decades of planning policies in London have constrained the supply of houses and land and turn them into something like gold or artworks (Cheshire, 2014). His explanations indicate that Government regulations have a huge part to play in the affordability of real estate, as well as in the development of the city's urban form.

#### *Immobile factors*

Land and labor are immobile factors that oppose the market size effects of linkages that influence agglomeration activity. Backward linkages occur when sites with access to large markets become preferred locations for the production of goods subject to economies of scale. Forward linkages occur when a large market supports the local production of intermediate goods, lowering costs for downstream producers.

The dispersion of businesses has thus been attributed to the distribution of land and labour markets. In this regard, agglomeration of firms increases the commuting distance for their workers, which ultimately pushes up wage rate and land rents in the immediate vicinity of the agglomeration (Ogawa & Fujita, 1980). This higher cost discourages further agglomerations of firm. A polycentric city is thus formed when multiple business districts are formed in an effort to combat high commuting costs (Fujita & Ogawa, 1982).

#### *So, what is the optimum location for businesses?*

The market potential of a given location reflects the trade-off among proximity to customers, degree of competition and production cost at that location. Ideally, businesses opt for a central location in the city,

#### Note

This thesis describes the negative impacts that a city can have on its residents because of its urban form, which has been established as an outcome of business location decisions. However, limiting the scope of the research, the level of unaffordability or the kind of psychological impact is not measured. These issues merely serve as a driving factor that prompts one to understand the implications of planning decisions, while still allowing for the expansion of businesses.

to improve accessibility to the services they provide and the customers they service. However, a CBD location can come with some drawbacks, namely high floor-rents and long distance employee commutes from the suburbs. On the other hand, if the firm moves all of its activities to the suburbs, it will incur a severe disadvantage in face-to-face communications with other business offices (Ota & Fujita, 1993). Both the economies and diseconomies of agglomerations are thus considered when businesses decide on the optimum location.

Therefore, the market potential or appeal of a location decreases when the industry moves away from its agglomeration, and increases again after a certain distance. This region in between is referred to as the agglomeration shadow (Mori, 2006). The size of the agglomeration shadow changes with the type of industry being considered, resulting in variation of the spacing between agglomerations (Fujita & Mori, 1997).

### 2.1.6 Urban economics

The resulting spatial configuration of economic activities can thus be viewed as an outcome of these centripetal and centrifugal forces, which forms the basis of economic geography (Fujita & Thisse, 1996). New economic geography (Fujita & Krugman, 2004) describes the spatial equilibrium that exists or emerges from a dynamic process in which individuals choose to locate in order to maximize their benefits.

Ideas on the economic effect of urban form have also been previously put forth in the Ricardian model of rent and the bid rent curve. The research on the Ricardian Law of Rent encompasses the effects of monocentric and polycentric urban forms on land value. This law states that the rent of a land site is equal to the economic advantage obtained by using the site in its most productive use, relative to the advantage obtained by using marginal (i.e., the best rent-free) land for the same purpose, given the same inputs of labor and capital (Ricardo, 1891).

#### *Central Place Theory*

Businesses often choose to locate in a region referred to as the Central Business District (CBD). This location allows them to function within a minimum threshold distance within which they can market their services to the population. On the flipside, customers are willing to travel a maximum distance for these services, which entails the range of the businesses reach. These concepts of threshold and range explain the pattern of settlements (Figure 8), which forms the basics of Central Place Theory as put forth by Christaller (Christaller, 1966).

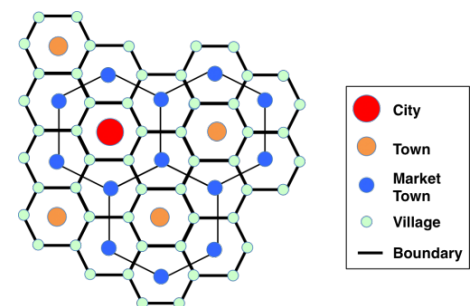


Figure 8: Central Place Theory (adapted from Geltner and Miller, 2007)

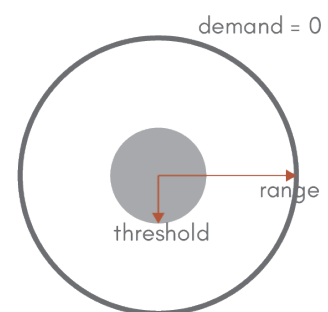


Figure 9: Market threshold and range (adapted from Christaller, 1966)



The ‘threshold’ is the minimum market (population or income) needed to maintain the selling of a particular good or service. ‘Range’ is the maximum distance consumers are prepared to travel to acquire goods. The result of this model is a set of generalizations where the results of consumers’ preferences produce a system of centers of various sizes, where each center will supply particular types of goods, forming levels of functional hierarchy (Rocco, 2008).

#### *Highest and Best Use of Land (HBU)*

The theory of highest and best use (HBU) explains the relation between land use and land rent. According to HBU, each parcel of land has its highest and best use, and the land rent varies from place to place as the highest and best use of land varies. Transport costs play a pivotal use in determining the highest and best use of land, wherein each function locates such that the transport costs for that function are minimized. HBU can be therefore be defined as The reasonable, probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. Value in this case is subjective, and can be perceived as the sale price for owners, minimum operating cost for tenants, best use for the community etc.

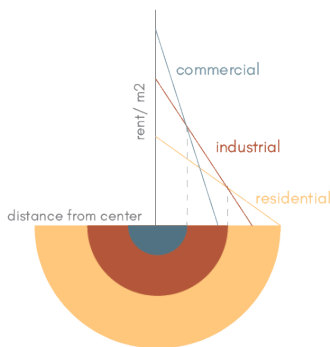


Figure 10: Bid rent curve (adapted from Alonso, 1964)

#### *Bid-rent theory*

The Bid Rent Curve was formulated based on Burgess’s concentric model. It explains the value of the land based on the distribution of the concentric land uses, and the increasing distance from the center (Alonso, 1964). The concentric model is thus a geographic model of urban form, whereas the bid rent curve describes an economic model. The bid-rent is the highest rent that a potential user would be willing to pay for a site or location (Geltner et al., 2001). The bid-rent is determined by the distance from a central point – going higher moving away from the central point. This central point is where the transport costs are minimized for that use, the point at which the bid rent or residual value is maximized. The function for which this central point (owing to minimal transport costs) provides the highest and best use ‘out-bids’ other functions from this point (Figure 10).

#### Key take-away 2.1

- > Land use and economic functions determine urban structure
- > Location decisions are also dependent on land values
- > Centripetal forces like knowledge spillovers, labor market pooling and market size effects cause businesses to agglomerate.
- > Resulting centrifugal forces can include high rents, traffic, congestion etc.



## 2.2 Competitive Advantage

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Despite the drawbacks of rapid urbanization and dense business agglomerations, a city is heavily dependent on economic efficiency for its sustenance. Since businesses are the engines of economic growth, they thus form the backbone of cities. A 'competitive city' facilitates its firms and industries to grow jobs, raise productivity and increase the income of its residents. The three sources of growth (World Bank, 2015) are expansions of existing firms, creation of new firms and attraction of investors. The competitiveness of a region is based on the ability of the local economy to provide an increased standard of living for its residents (Malecki, 2002; Singhal, McGreal, & Berry, 2013), tackling the externalities mentioned previously therefore becomes a key step toward achieving competitiveness.

### 2.2.1 Global cities

The term 'Global city' was coined by Saskia Sassen, who states that major cities have acquired a strategic role as centers of command in the organization of world economy (Sassen, 1991). Global integration has assisted some cities in becoming key locations for regional headquarters of large transnational corporations and advanced tertiary activities, These 'command functions' have replaced manufacturing as the leading economic sector of a new phase in capitalist accumulation (Rocco, 2008)

These cities now function in four new ways (Sassen, 1991):

- as highly concentrated command points in the organization of the world economy
- as key locations for finance and for specialized service firms, which have replaced manufacturing as the leading economic sectors
- as sites of production, including the production of innovations, in these leading industries
- as markets for the products and innovations produced

### 2.2.2 Determinants of competitive advantage

Bramezza states that the object of competition between cities is their urban function (Bramezza, 1996). Each city specializes in one or more functions in trade, financial business, tourism etc. These specializations, or 'urban functions' become an important part of the

economy when its products are consumed not only by local actors, but external actors as well (Cheshire & Gordon, 1995).

The determinants of national competitive advantage are based on the environment in which local firms compete that promote or impede the creation of competitive advantage. Porter's Diamond seen in Figure 11, also recognizes the impact of the institutional environment on competitiveness. The Porter Diamond suggests that countries can create new factor advantages for themselves, such as a strong technology industry, skilled labor, and Government support of a country's economy (M. E. Porter, 1990). The diamond model indicates the self-reinforcing nature of the system, with each determinant affected and affecting the other.

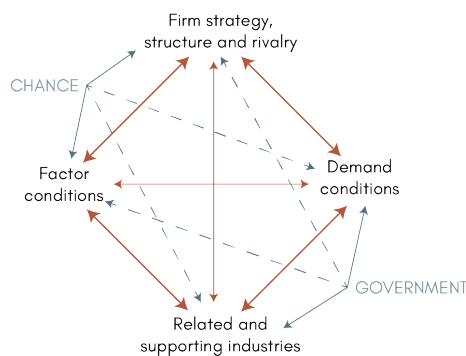


Figure 11: Porter's Diamond (Porter, 1990)

- Factor conditions- nation's position in factors of production like skilled labor, infrastructure etc. necessary to compete in a given industry
- Demand conditions- nature of the home demand for the industry's product or service
- Related and supporting industries- the presence or absence of supplier industries that are also internationally competitive.
- Firm strategy, structure and rivalry- conditions in the nation that govern how companies are created, organized and managed, and the nature of domestic rivalry.

On a national level, Governments can (and should) consider the policies that they should follow to establish national advantages, which enable industries in their country to develop a strong competitive position globally.

### 2.2.3 Urban areas as vehicles of competitiveness

Urban form is closely linked to a city's competitiveness (Begg, 1999) since by nature of their asset value, real estate is a driver of competitiveness. This notion of property playing an influential role in shaping urban competitiveness and performance of the urban economy is also reinforced by other researchers (D'Arcy & Keogh, 1999). Due to increased interdependencies in a globalized world, along with growing complexity of urban areas, competing is now better conceived as searching for the best solution for specific problems 'in a strategic way, at the right time and in the right place' (Bramazza, 1996).

The economic liberalization now taking place in many developing countries has increased the importance of urban areas as recipients for Foreign Direct Investment. As a result, the study of urban competitiveness is significant in the developing world (Srinivas, 1998).

Urban planning processes will fail unless they embrace participation by all those in the city who are affected or have expertise in the process. Sustainable urban development for a city can be defined as the maximization of economic efficiency in the use of development resources (including the goods and services provided by the natural environment), maintaining natural resources stocks at or above the present level; social equity in the distribution of development benefits and costs (with particular emphasis on the needs of the low income groups) and avoidance of unnecessary foreclosure of future development options (Clarke, 1995).

#### 2.2.4 Strategies for competitiveness

Research has linked the concept of urban competitiveness to regeneration of cities and property led business strategies (Singhal, Berry, & McGreal, 2009). Certain cities capture the opportunities for growth and development, attract leading edge business and investment. They present a combination of core attributes for success based on their inherent competitive advantages and planned strategies. These cities employ policies and strategies related to urban regeneration and business linked to the property sector in an effort to improve their competitive advantage. Other cities are faced with challenges of derelict land and properties, degraded physical environments and various social and economic concerns including inadequate inward investment that negatively influence their competitiveness.

Ideally, a city's proactive engagement in competitiveness includes all three of the wedges. Successful cities leverage their full city wedge, using their internal scope and capacity, creating growth coalitions with the private sector, and linking with other levels of government and neighboring jurisdictions. All of the case-study cities employed some form of public-private dialogue that had a visible bearing on their economic outcomes. (World Bank, 2015)

#### *Partnering with businesses*

By adopting business led partnerships with the community and/or local authority, the private sector can contribute substantially to regeneration strategies (Hart 2003). From the perspective of the public sector, renewal strategies are adopted in cooperation with private and civil actors in an effort to attract private investment (Verhage, 2005).

The three key players involved in local economic development; public, private and non-Governmental sectors, work together to strengthen economic capacity of an area for a better quality of life for all. This process is called local economic development LED (Swinburn, Goga, & Murphy, 2006).

For multi-national corporations (MNCs), fundamental attributes of cities explain most investment location decisions. Existing literature on location determinants of foreign direct investment (FDI) highlights that the presence of robust institutions, government stability and infrastructure, matter significantly when multinational firms aim to expand and make location choices. (World Bank, 2015)

But other “softer” factors—such as the professionalism and responsiveness of city leadership to investor needs and the overall image and quality of life that cities offer to corporate leaders—can tip the balance between competing locations. The final mile of such decisions consists of the interactions between firms and cities in the final stage of the decision making process. These so-called 10 percent factors often tip the balance of a decision between one city and its closest competitors in securing an investment.

As cities around the world are confronting the challenges of expanding their economies and creating jobs, the need for collaborative work between public and private stakeholders in cities has become more apparent. A World Bank Group study into competitiveness of cities shows that public-private coalitions were behind turnaround stories in a number of successful cities. PPD is one of the tools that can help build coalitions that may play an important role in defining a city’s growth trajectory. PPD can thus be a valuable addition to the toolbox of city competitiveness practitioners (Sivaev, Herzberg, & Manchanda, 2015).

Public-Private Dialogue (PPD) refers to the structured interaction between public and private sector stakeholders to promote the right conditions for private sector development, improvements to the business climate, and economic development.

City level PPD is always more geographically restricted than national PPD, but it doesn’t have to be purely local and it doesn’t have to match municipal boundaries. The geographical coverage and the selection of actors for a city PPD should be driven by the challenges that the PPD initiative is trying to address. Dialogue that targets a small cluster or specific infrastructure issue can be contained in a small geographic space and can include city officials, local business and

communities. PPD aiming to define strategic priorities for a city-region would have to cover appropriate economic geography and would have to include several local authorities as well as businesses from across the metropolitan area. Finally, for issues that span beyond local governments' remit, the involvement of national or regional authorities should be sought (Sivaev et al., 2015).

### 2.2.5 Competitive cities

Competitive cities seek to distribute economic activities from the bottom up rather than the top down, and perceives the urban area and its economic performance, as if in competition with other cities or regions. Therefore, the search for urban competitiveness should ultimately aim at sustaining and enhancing the welfare of the actors that are already operating and living within the city's boundaries, and others that are likely to be attracted to the city by its success (Srinivas, 1997). Competitiveness of a country is defined through the set of institutions, policies and factors that determined its level of productivity (M. Porter, Sachs, Warner, & Schwab, 2000)

#### *What do cities expect from businesses?*

Based on the economic nature of businesses, it is obvious that job creation and economic growth determine the success of these competitive cities. Those cities witnessing rapid urbanization and reforms that allow Foreign Direct Investment (FDI) are often competitive cities. It is therefore important to understand what factors help to attract, retain and expand those firms spurring the city's economic growth. It is also equally important to consider the needs of the employees of these businesses in order to create urban areas that are equally attractive and affordable for them to live and work in.

The concentration of economic activity, innovation and interaction in urban areas is only predicted to grow. By 2025, McKinsey Global Institute projects that the economic output of the world's 600 wealthiest cities and metropolitan areas will grow by £18 trillion compared to its 2010 level, accounting for almost two-thirds of all global growth (Dobbs et al., 2012). Governments realize the driving role that businesses play in the economic future of their cities. In order to shape the future of cities and restructure their urban economies, the field of urban planning; which was dominantly a public sector role, has increasingly become privatized and decentralized (McCann, 2001).

*What do businesses want from the city?*

During the second half of the 20th century, businesses in leading industrialized nations moved out of the city center towards the rural-urban fringe, attracted by the promise of good accessibility by car, cheaper rents, and a more pleasant, less dense working environment (Moir, Moonen, & Clark, 2014). This is referred to as suburbanization, and has led to the growth of business parks, industrial estates and out-of-town shopping centers outside of the city center (Clark & Moir, 2014). Such a trend of urban sprawl is reminiscent with the formation of edge cities.

Edge cities are born in the suburbs as an attempt by large land developers to strategically maximize profit in the context of competitive land and labor markets (Vernon Henderson & Mitra, 1996). The developer is thus able to exercise monopoly over these markets by controlling employment in these suburbs. The popularity of edge cities can be contributed to cheaper real estate, better security, technologically advanced buildings etc. Overall, when compared to traditional CBD's, the edge city can offer its employees a higher quality of life while still cutting down costs and maximizing profits. As Table 3 indicates, businesses look to the City to provide a business environment, which entails skilled labor, supportive infrastructure, land and fiscal incentives (Zhu, Larrey, & Santos, 2015). A transparent and collaborative Government act as further incentive for them to locate in that particular city.

Table 3: What do private sector investors need from cities? (Zhu, Santos and Larrey, 2015)

Category	Factor	Level of city influence	FIRM TYPE			
			Efficiency seeking	Market-access seeking	Strategic asset seeking	Resource seeking
Location endowments	Proximity to major markets/distributors	○	🏠	✓		
	Natural resources	●	🏠			✓
Relationship with city	Personal connections between firm and city	○	✓			
	"Soft power": city image, proactive mayor, proactive and responsive IPIs	●	✓	✓		✓
General business environment	Macroeconomic stability and growth potentials	○	✓	✓	✓	✓
	Institutional and regulatory environment	●	✓	✓	✓	✓
	Labor availability, skill and cost	●	✓	✓		✓
	Infrastructure and availability of land	●	✓	✓		✓
	"Sweetener": fiscal and nonfiscal incentives	●	✓			
Level of sector development	New opportunities due to a neighboring country or city moving up the value chain	○	✓	✓	✓	
	Presence of forward- and backward-linkages firms	●	🏠	🏠		✓
	Presence of similar firms/competitors	●	✘	✘	✓	

- City has no influence
- City has influence but not full control
- City has major influence or full control

- ✓ Valued by all firm types (strategic asset-seeking and resource-seeking were not broken out by firm type)
- 🏠 Valued by service firms only (efficiency-seeking refers to back office services; market-access refers to high-end services)
- ✘ Valued by manufacturing firms only

Source: Zhu, Santos, and Larrey 2015.  
 Note: IPI = Investment promotion intermediaries.

What can cities offer businesses?

Notwithstanding the appeal of edge cities and the drawback of CBD locations as stated previously, from the late 1980s onwards, many established cities have witnessed a reversal of urban sprawl. Businesses have moved their operations back to the city center by establishing a presence in the CBD via corporate front offices, while still maintaining back offices in the suburbs. Such a trend has commanded a densification of the existing city fabric in order to accommodate more businesses, a trend referred to as re-urbanization.

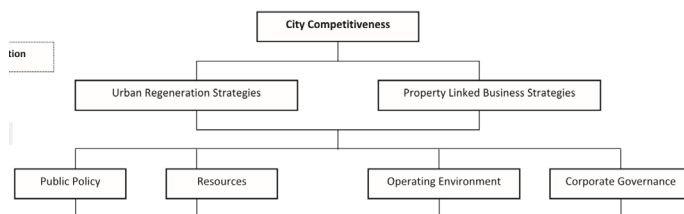


Figure 12: Part of the hierarchical model for city competitiveness (Singhal et. al, 2007)

Re-urbanization is often an active measure adopted by Governments to combat a splintered urban form and revitalize the inner city (Buzar et al., 2007). Along with infrastructure improvements, it has been realized by adapting planning and building regulations in the wake of new demands from businesses.

## Key take-away 2.2

- > Real estate and economic growth are drivers of competitiveness in a city
- > Cities must tackle negative externalities to maintain a competitive edge
- > Governments pursue partnerships with businesses to help revitalize the city and attract investment

Figure 12 indicates how city competitiveness is dependent on several factors including public policy and corporate governance. These factors translate into city competitiveness through strategies at the urban level as well as the business level. This balance forms the essence of the thesis. Section 2.3.3 elaborates how one city, London, actively orchestrated itself into a globally competitive city by conducting reforms across institutional frameworks, policies and partnerships. As illustrated through this example, London is one such city that has proved that collaborations between the private and public sector are vital to competitive advantage.



## 2.3 Collaborative Planning

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It is clear that cities and businesses share an interdependent relationship- each is heavily reliant on the other for their success. While cities house a labor pool and provide infrastructure and services that can be tapped into by businesses, the functioning of the businesses, contribute to an improved economic environment for the city. This dynamic highlights the relationship between economics and geography. As explained previously, metropolitan cities face many challenges in the current environment of population expansion and globalization. To maintain their competitive edge, cities need to be equipped to tackle the negative externalities associated with urbanization.

In such a strained context, the city authorities may not be financially capable of solving these issues alone, and may even benefit from specific knowledge from the private sector. Researchers have asserted that Governments, businesses and civil society are unable to tackle these issues by themselves (Koppenjan & Klijn, 2004), mainly due to increasing resource dependency among different actors and levels. Collaborations between cities and businesses hold the promise of improving economic growth and quality of life in the cities.

### 2.3.1 Schools of planning over time

The practice of planning has changed over time, and can be divided into three schools based on the approach to the planning process (Horita & Koizumi, 2009; Lane, 2005). These are the blueprint model, the synoptic approach and the pluralist approach.

#### *Blueprint model*

The main player in the blueprint model is the planner, appointed by the state. The objective was to create and execute fixed end-state plans. This approach puts the planner at the center, consequently assigning power to the state to be able to implement its goals.

The approach is criticized because the planner makes many assumptions on the needs of society and future developments. Often, the plans are outdated even before implementation. The blueprint model is characteristic of a hierarchical political system that takes little account of private interests or opinions of the public.

#### *Synoptic approach*

This second wave of approach to planning resulted from criticisms of the blueprint model. Planning models that adopted the synoptic

approach in the 1960's therefore introduced a system of reviews and consultations to cope with the uncertainty of the future. Planning transformed into an iterative process, with feedback from other societal actors.

Power centralization began to be questioned, opening the door for multiple actor decision making in the planning process. This approach is criticized since it still addresses a broader societal need, rather than conflicting views within the urban context.

*Pluralist approach*

Since the 1960's, multiple methods have been adopted, together classified as pluralistic approaches to planning. These models recognize the political nature of planning, and the differing opinions between actors of the same group.

planning school	planning tradition	level of participation	planning models
blueprint	societal guidance	therapy manipulation	Blueprint planning Geddes, Howard precinct planners
synoptic	societal guidance	placation consultation informing	mixed scanning Incrementalism Synpotic planning
pluralism	societal transformation	citizen control delegated power partnership	Communicative Bargaining Marxist Advocacy Tranactive

Figure 13: Conception of planning and the role for public participation (adapted from Lane, 2005)

A summary of the three waves of planning approaches is depicted in Figure 13. The first wave of planning positions market parties as executors and gives no room for public participation. The second wave recognizes the public as an important participant, but largely in a consultative manner, as well as the involvement of players other than the planning authorities. The final wave encompasses contemporary approaches that consider participation a fundamental element to the planning process.

2.3.2 Plan led and market led schemes

Collaboration models can be classified as plan led and market led schemes, based on the origin of the initiatives (Galland & Hansen, 2012). On one end of the spectrum typically top-down strategies like public-investment planning and regulative planning where the leading parties are part of the Government (plan led schemes).

The other end of the spectrum has trend planning and leverage planning, where the initiative comes from the private sector (market led schemes). Furthermore, typical bottom-up approaches can be deemed as those that explicitly link community development and economy, through citizen empowerment (Jessop, 2002). These processes are characterized by a lesser involvement of public and private parties (i.e. developers), which implies limited funding in numerous occasions (Bailey, 2012). Community residents also participate in city planning and initiatives, exercising bottom-up approaches that improve the environment and economy of the city. These processes are characterized by a lesser involvement of public and private parties (i.e. developers), which implies limited funding in numerous occasions (Bailey, 2012)

While both approaches have their criticisms, collaborative planning is quite challenging. In a collaborative model, inequalities in the power structures of the networks can result in a more hierarchical relationship, led by the more dominant actors (Ansell & Gash, 2008; Van Bortel, 2016). This tendency could defeat the purpose of collaboration. Therefore, actors are urged to interact in new ways, in the context of strategic networks that do not comply with traditional schemes (Koppenjan & Klijn, 2004).

One such approach to planning gaining popularity is Local Economic Development (LED). LED focuses on enhancing competitiveness, increasing sustainable growth and ensuring that growth is inclusive. It encompasses a range of disciplines including physical planning, economics and marketing. It also incorporates many local government and private sector functions including environmental planning, business development, infrastructure provision, real estate development and finance (World Bank, 2010).

### 2.3.3 Global Cities Business Alliance

In response to globalization and intercity competition, several institutional changes took place in London in the 1990's. These pressures dominated policy agenda, in which the private sector held an important role. The central Government soon realized that to enhance London's competitive position, the fragmented institutional structure needed to be counteracted (Kantor, Lefèvre, Saito, Savitch, & Thornley, 2012; Perulli, 2016). The London Forum was established to promote the capital city in 1992. Subsequently, London First was also set up in 1992 by the private sector, to engage the business community in promoting and improving London. When the

Government merged London Forum with London First, it was the birth of private sector leadership with central Government backing.

Over time, too many organizations were born and there was a lack of accountability or clear responsibility division. This strategy therefore did not result in a unified Government for London as was intended, but instead a central Government highly influenced by the private sector, London First then initiated the Global Cities Business Alliance (GCBA) to respond to the growing importance of cities to business and the shift of power from the national to the city level (London First, 2015). Their aim is to influence national and local Government policies and investment decisions to support London's global competitiveness.

The GCBA conducted several studies to classify the kind of interaction between the private and public sector (Global Cities Business Alliance, 2016). This classification is based on

- whether the interactions are led by cities, businesses or jointly, and
- whether these interactions are strategic or operational in nature

Within the framework of GCBA, city-led interactions therefore refer to those instances where Government authorities at the city level drive change. This classification indicates the importance given to local authorities to improve competitive advantage of cities. Businesses refer to those that dominate the economy, especially in service sector led cities. Strategic planning is generally long lasting, undertaken in order to achieve the tactical objectives of an organization. It enables the organization, in this case city Government or businesses, to pursue its vision. In contrast, operational planning is often ad-hoc and specific, focused on achieving short-term objectives.

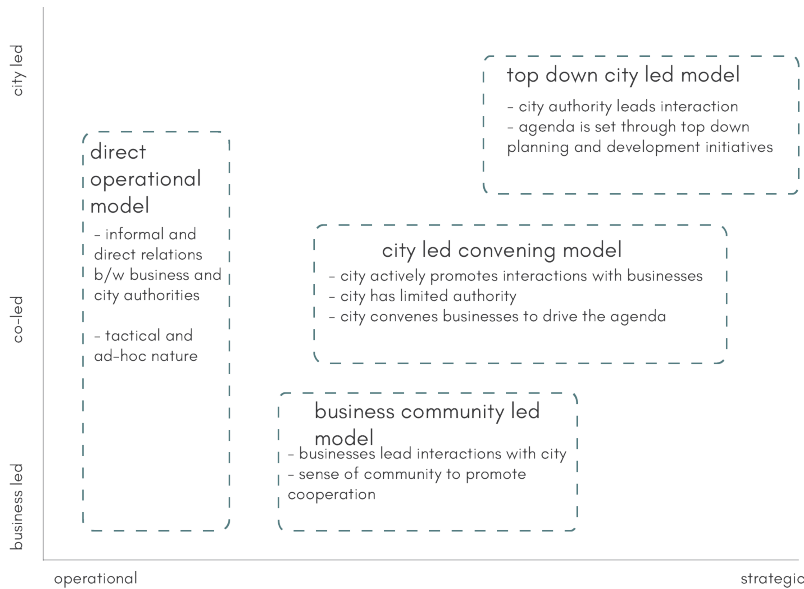


Figure 14: Collaboration model framework (adapted from Global Cities Business Alliance, 2016)

Based on these definitions, the GCBA initiative has thus grouped the type of collaboration into four models as depicted in Figure 14. Each model depends on various criteria for their success as seen in Figure 15, which form the criteria for selecting a specific planning model.

Top down City led model is observed in cities like Shanghai with a strong city authority that is aligned with the central Government. Centralized planning thus plays an important role in shaping the business agenda. Interaction is typically dominated by the Government in such cases, and often occurs in cities with stable leadership.

City led convening model is observed in cities like London and Berlin that have a strong sense of identity and agenda, with authorities split into boroughs or districts. In this case, authorities have limited power in regulations and investment; therefore convene with business groups in order to formulate strategies that can be driven forward with their support.

Business community led model is recognized in cities like Sydney and Chicago, with a strong business presence but no consolidated city authority. City authorities in these cases are subject to strong regional or national authority.

#### Key take-away 2.3

- > Approaches to planning have changed over time, multiple stakeholder participation is increasing
- > Global Cities Business Alliance has classified collaboration models based on their strategic or operational motive, and whether cities or businesses lead the collaboration
- > Single actors (governments, businesses or citizens) are unable to tackle negative externalities alone, mainly due to increasing resource dependency among different actors and levels.

Direct operational model is observed in cities like Mexico City and Bangkok, where authority is still developing and interactions are largely informal. Political autonomy is high with a focus on attracting business and investments to the city. Project based partnerships are popular in such cities.

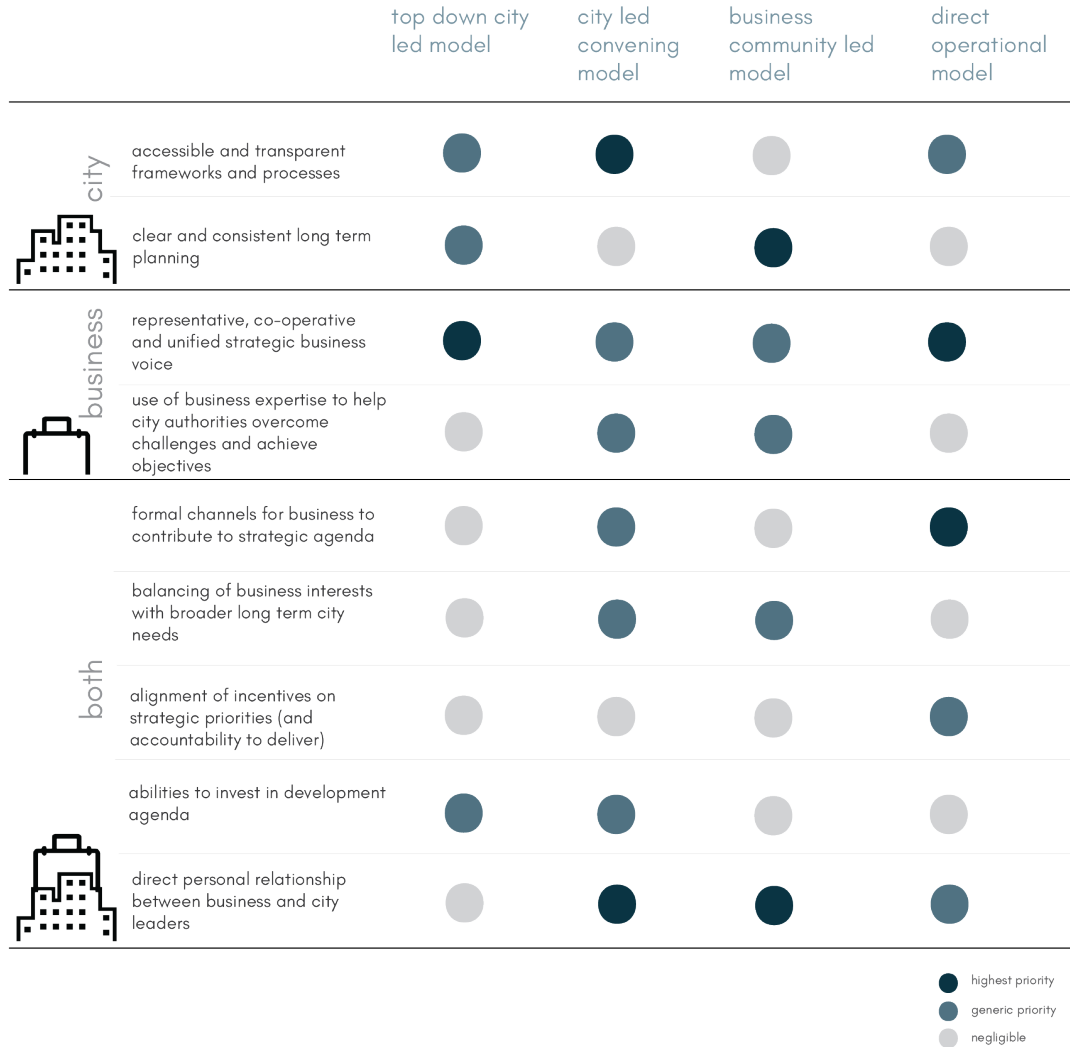


Figure 15: Success factors of the models (Global Cities Business Alliance, 2016)

## 2.4 City Comparisons of Governance and Business Locations

Post WWII, many developed countries adopted welfare state economics in an effort to create equity in housing, education and health. This was characterized by a clear division between public provision and private action, along with a hierarchical top down approach to governance (Healey, 1998). Rapid urbanization has put increased pressure on the local and central Government to improve the social and environmental qualities of cities. With such increasing demands from businesses and the community at large, the Government has recognized that solitary action alone is insufficient in meeting the challenges of a growing city.

Urban governance thus now operates with a diffusion of governance power and responsibility, with joint ventures, public private partnerships and heavy private investment becoming increasingly common. This changing role of the private sector in urban development projects is also noticed across the globe in major metropolitan cities like Shanghai, London, Sydney, Bogota and Bangalore. This section briefly describes the pattern of growth in these cities, and analyses the respective roles of the private and public sector in this growth.

### *Case sampling*

Utilizing the framework of collaboration model developed by the Global Cities Business Alliance, a representative city is chosen to briefly study. Each city (Figure 17) presented will narrate a short story of its growth over time with a particular emphasis on the role of the city and the private sector attitude. The comparison of cities thus allows testing the hypothesis that the manner in which a city develops is heavily dependent on the agenda of businesses. By tracing the historical development structure of these cities with further research, the outcome of the planning model adopted can be concluded for each city. A pattern is thus drawn on how attitudes of the city are reflected in its urban form and quality of life.

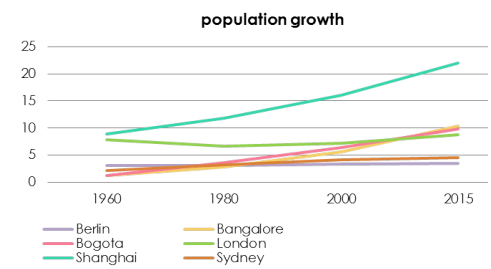


Figure 16: Urbanization in cities (own illustration from World Population Review)

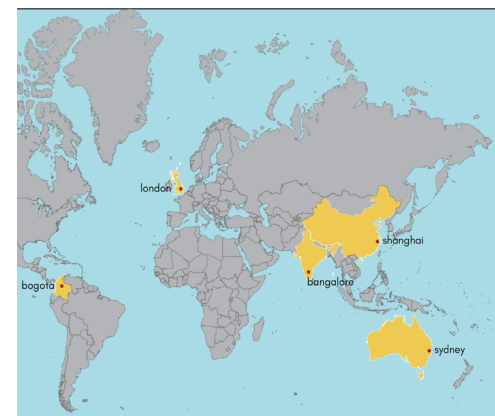


Figure 17: Cross national comparisons (own illustration)

Bangalore has been selected as an outlier, with no model being assigned to it yet. However, the city forms the focus of the research because of its relevance to the themes being explored.

- Business location decisions- It is a preferred destination for IT related businesses, both foreign and domestic
- Competitive advantage- With a phenomenal rate of urbanization, the city provides jobs to millions. It has also developed a brand of being the Silicon Valley of India
- Collaboration models- Bangalore is dominated by a prominent service sector, but is governed by a fragmented Government

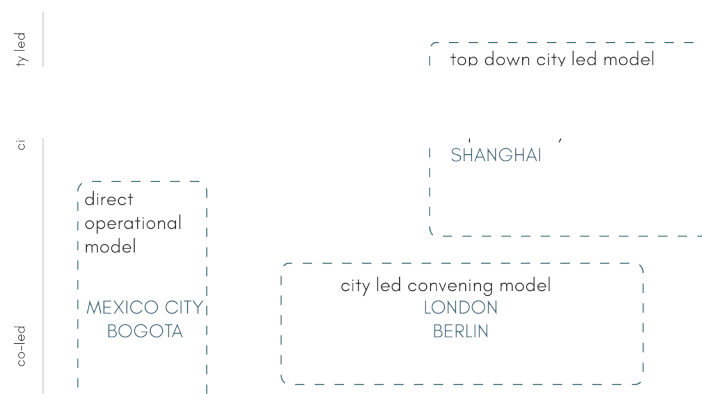


Figure 18: Collaboration models in various cities

structure.

Bangalore is thus chosen for an empirical case study. Four other cities namely Shanghai, London, Sydney and Bogota have been briefly studied to understand the dynamics between the three themes being explored elsewhere in the world. This helps form a frame of reference to judge how collaboration can affect the city. These cities are subsequently explained.



### 2.4.1 Shanghai

#### Shanghai city statistics

Location	China
Economy	Export oriented industries
Metropolitan region area	7300 sq.km
Population	22 million (2015)
Average density	3000 persons/ sq.km.

Unlike other big cities in the world, Shanghai, under the leadership of the Communist Party of the PRC, has parallel national party and Government administrative apparatuses (Laquian, 2005). Economic reforms in the 1980's allowed China to place itself in the forefront of trade. As a major port city, Shanghai underwent massive redevelopment focused at the center. By the 2000's, urban containment was incorporated in the structure plan, and decentralization took over as seen in Figure 19. Soon, the population exploded to such an extent that regional integration was adopted with the birth of satellite cities under the banner of 'One City, Nine Towns' (Global Cities Business Alliance, 2016).

The urban area in Shanghai has grown at the expense of farmland and water bodies. (J. Yin et al., 2011). Future urban expansion is expected to take place along the main traffic routes between the center and the surrounding towns. Recently, the urban policy of Shanghai has shifted to urban renewal of the core city and relocation of employment to the suburbs in order to foster a higher quality of life in the center (ADB, 2014). The development of satellite towns, industrial parks, and infrastructure has been accompanied by a large influx of migrants from the rural areas.

*The structural changes in Shanghai's urban form can be attributed to three driving forces- globalization accompanied with increased privatization, economic reform and urban competitiveness between cities. Today, Shanghai's polycentric structure is a result of a top down city led model as a means to tackle unprecedented growth and fulfill its 5-year plan- The Four Centers initiative, seeking to position the city as a financial, trade, shipping and economic center.*



Figure 19: Development of Shanghai's structure plan in 1990, 2000 & 2015

### 2.4.2 London

#### London city statistics

Location	United Kingdom
Economy	Financial services
Metropolitan region area	1700 sq.km
Population	8.4 million (2015)
Average density	5000 persons/ sq.km.

The finance capital of the world, London is home to the foremost banking institutions and investment companies. A booming metropolis and a preferred choice for many young professionals, the city has seen phases of urbanization. Post WWII in 1945, the city witnessed a drop in population as many left the city because of the congestion and high cost of living. In 1950, the green belt around London (Figure 21) was realized in an effort to contain urban sprawl. By 1970, people began to migrate back to the city, and urbanization has been relatively steady since then. The cost of land on the other hand has seen a step increase in this time.

As per the London Plan, two areas have been identified as business

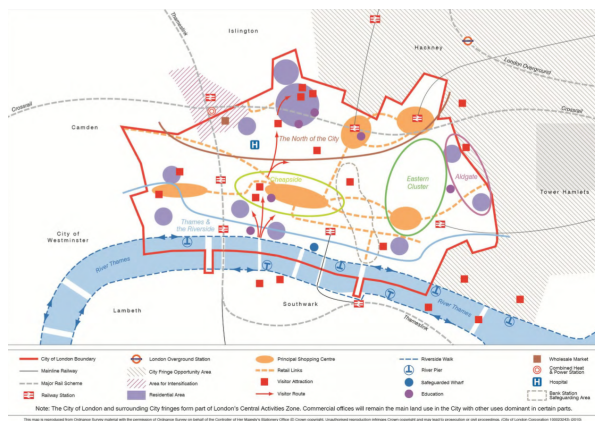


Figure 21: Key City Places in London (City of London, 2015)

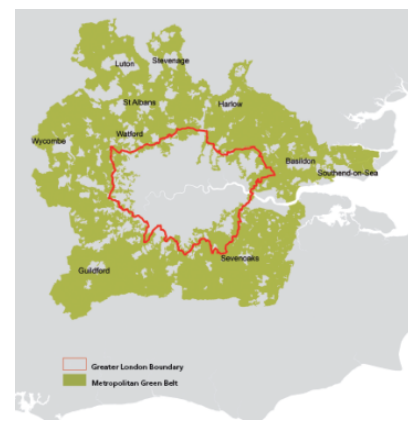


Figure 21: Green belt around London

centers- London Central Activities Zone and the Eastern cluster, including the Tech city and the City Fringe. An evaluation of the plan indicates a focus on expanding the current business centers outward. Furthermore, densification has been promoted by allowing vertical expansion of existing buildings in the center.

*London exhibits classic city led convening model of urban planning to govern its various boroughs. Based on the urban system of sub centers (Berry & Garrison, 1958), it appears that as a compact city London adopts a monocentric form with a CBD.*

2.4.3 Sydney

Sydney city statistics

Location	Australia
Economy	Finance, manufacturing, trade
Metropolitan region area	1687 sq.km
Population	5 million (2015)
Average density	2900 persons/ sq.km.

The coastal position of the city has caused a western sprawl in Sydney as seen in Figure 24. The Sydney Metropolitan Strategy of 2005 (Figure 22) was a planning initiative to create Sydney as a ‘City of Cities’(Department of Planning, 2005). This strategy is an attempt to consolidate the sprawl and decongest existing business centers by creating urban growth centers with larger capacities for growth. The subsequent plan in 2014 (NSW Government, 2014) also continued focus on growing the city westwards to create a second CBD in Parramatta, where the employment centers are located as per the previous plan of 2005. The execution of A Plan for Growing Sydney will take place via collaborations with other city Governments.

*Sydney therefore lacked a strong city Government, and the business community initiated many interactions. Comprising business leaders, Government authorities, universities etc. the Committee of Sydney to drive civic engagement, transport and planning. The committee advocated the creation of a consolidated city Government- the Greater Sydney Commission was thus formed in 2015. Sydney therefore displays a classic example of a business led collaboration model.*

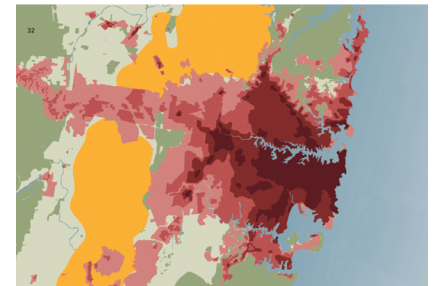


FIGURE 11 SYDNEY'S URBAN GROWTH HISTORY  
 BEFORE 1917  
 1917-1945  
 1945-1975  
 1975-2005  
 2031\*  
 \* SCENARIO IF THE RATE OF SPRAWL OF THE PREVIOUS 30 YEARS WERE CONTINUED

Figure 22: Growth and sprawl in Sydney (Department of Planning, 2005)

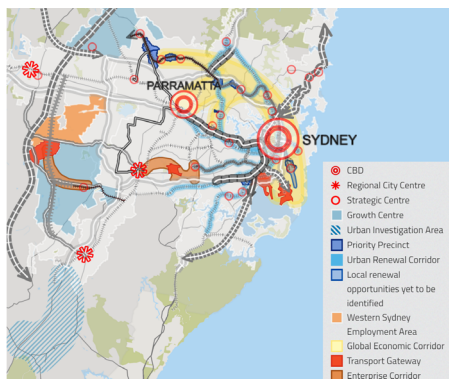


Figure 23: A Plan for Growing Sydney (NSW, 2014)



Figure 24: Sydney Metropolitan Strategy (Department of Planning, 2005)

### 2.4.4 Bogota

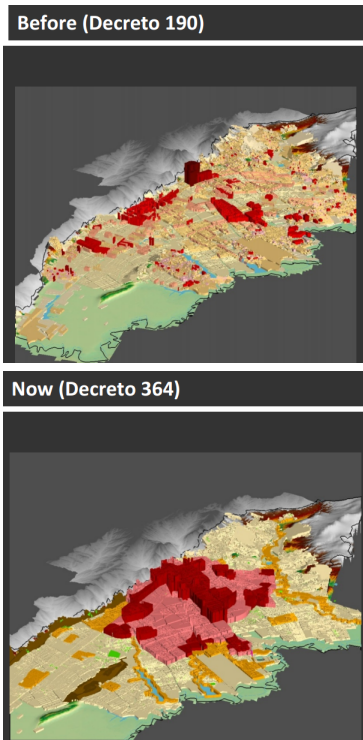


Figure 25: Densification in Bogota (Bogota Humana, 2013)

#### Bogota city statistics

Location	Columbia
Economy	Finance, manufacturing, trading
Metropolitan region area	1587 sq.km
Population	9.8 million (2015)
Average density	6175 persons/ sq.km.

The capital city of Colombia, Bogotá’s pattern of growth and concentration shows that the process of urban development has generated concentration in the central city with over six million inhabitants in an area of only 310 sq.km. (Rueda-Garcia, 2003). With the growing migration of residents from the rural areas to the city, the city began to sprawl outward to accommodate more people in an already dense fabric. Being the largest city in Columbia, Bogotá is its industrial and economic center. Most of the economy is reliant on trade and tourism. However, the sprawling pattern of development has caused several problems with disparate economic groups as well as ecological encroachment.

Since 2000, the land use plans have directed development towards creating a compact, inclusive city with a conscious restriction of urban expansion as seen in Figure 26 (Bogota Humana, 2013). This is accomplished by linking the Regional Planning System with the Capital District Planning. The strategy calls for development in partnership with residents, landowners and developers. City administration is in the hands of an elected Mayor and a City Council, who have the power to pass planning regulations.

*Bogota follows a direct-operational model of collaboration, illustrated through the Invest in Bogota initiative. It is the investment promotion agency for Bogota, a public-private partnership between the Bogota Chamber of Commerce and the Bogota City Government (Invest in Bogota, 2007).*

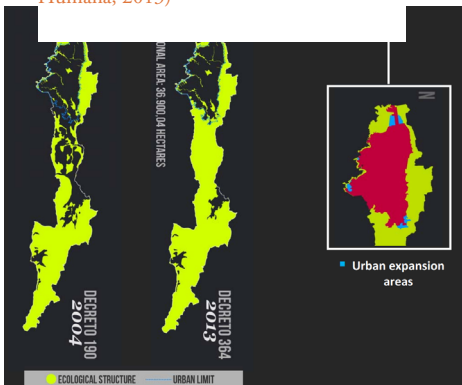


Figure 26: Controlled expansion in Bogota (Bogota Humana, 2013)

#### Key take-away 2.4

- > Cultural and political environment affect the nature of collaboration in cities
- > Devolved city Governments have more power to direct growth and make strategic choices
- > There is a global movement toward more dialogue with the private sector
- > Bangalore is selected as a case study to determine the type of collaboration based on the GCBA framework



## 2.5 Lessons from history

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As early as the 19th century, developed countries have experienced deteriorating living conditions and even migration out of the city. Cities like London witnessed a population drop in the mid 70's because of severe pollution and deplorable living conditions. This urban decay is a process whereby a previously functioning city, or part of a city, falls into disrepair and decrepitude. Urban decay can result from a combination of socio-economic conditions including the city's urban planning decisions, tight rent control, the poverty of the local populace, suburbanization of peripheral lands etc. The outward migration from the core cities was increasingly perceived as problematic, Van den Berg et al. (1982) study attempted to analyze further the process of urban change emphasizing the diversity of European urbanization. They set up a hypothesis that cities evolve in a sequence of urban development stages or »urban life cycles«: urbanization, suburbanization, de-urbanization and re-urbanization.

As a reaction against the unhealthy urbanity of the 19th century, Howard conceptualized the idea of the Garden City (Howard, 1898), illustrated in 2.1.1, which would bring together the virtues of the town (jobs, culture, opportunities), with the virtues of the countryside (greenery, fresh air, quietude). Both in Britain and in USA this ideal was taken up as a powerful normative theory of planning, in shaping the form of urban growth through the 20th century (Pichler-Milanović, 2007). In Britain, this led to the development of Garden Cities, and eventually to the New Towns program of planned suburbanization.

### 2.5.1 Urban sprawl

In many cases, developments to absorb rapid population growth took the form of new towns, like in Britain and France, or peripheral extensions to existing urban areas. This was an example of planned urban sprawl or decentralization of population and jobs. Throughout the 20th century, the combination of rising car ownership and highway building continued to reduce transport costs and allow developments to sprawl at greater distances at no financial cost. This has allowed cities to sprawl over a larger area without economic loss. Residents can live at greater distance from their places of work, shopping and leisure, without additional travel costs. Similarly, firms can deliver goods and services over larger areas without additional travel costs.

### 2.5.2 Consequences of sprawl

There are many instances where the private costs and benefits of sprawl differ from the social costs, or where a sprawling decision might have benefits for one social group while and costs for other groups (Ewing, 2008). By definition sprawl leads to greater distances between homes, between homes and jobs and between urban activities generally, generating more demand for travel and improvements in transport systems. These changes then have environmental consequences, economic consequences in terms of costs of infrastructure construction and maintenance, and even social consequences. As subsequently explained in 4.1.2, Bangalore suffers from several, if not all, consequences of unplanned sprawl.

The need to control urban sprawl and develop cities that are more compact is generally accepted by governments across Europe, with policies that address the need for sustainable development. As early as 1990, the European Commission Green Paper on the Urban Environment called for the avoidance of urban sprawl and strategies that emphasize mixed use and denser development. In 1999, the European Spatial Development Perspective recommended the concept of the compact city in order to have better control over further expansion (Pichler-Milanović, 2007). For this purpose co-operation between the central city and the surrounding areas must be intensified with new forms of reconciling interests on a partnership basis.

On the other hand, in cities of southern Europe, land was developed despite existing development plans forbidding urban use. Planning culture was characterized by political processes that took place beyond the established public decision-making. This goes to show that without a dialogue between the developers or owners of land, enforcing development laws that might be unfavorable to the private parties becomes a challenge in itself in those cities facing unprecedented growth. Evidently, there is no single remedy to control outward development of the city, but a step in the right direction is to facilitate dialogues between the parties responsible for the development.

#### Key take-away 2.5

- > Unplanned urban sprawl has severe environmental, economic and social consequences
- > Most European cities therefore tend toward compact cities with mixed use developments
- > Cultural differences affect the planning approach as seen in some cities
- > Involving all stakeholders responsible for development is a step ahead to control sprawl.

## 2.6 Summary

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Urbanization, more specifically the pace of it affects the city on various fronts. Previous research by Krugman and Pigou has brought to light the negative externalities of agglomeration economies by exploring the relationship between urbanization and economic growth. Increased migration to cities has led to crowding, pollution, traffic congestions etc. in some cities. Agglomeration economies are a result of business location decisions, for several reasons such as knowledge spillovers, thick labor markets and backward-forward linkages associated with local markets, to name a few.

Furthermore, real estate decisions of businesses are often influenced by economics of land value, rent and transport costs as seen in the Bid-rent theory and theory of Highest and Best-Use of land. The tendency for businesses to agglomerate describe urban form on the basis of geography of economics- the manner in which businesses choose their locations based on what they can gain from said location. Therefore, it is crucial to understand and influence location decisions given the resilient nature of spatial structures.

Since cities are dependent on the economic growth realized from businesses, they employ tools like planning regulations and policy development to attract more businesses, helping them gain a competitive edge over other cities. Policy makers therefore avoid a fragmentation of the labor market and urban form because large labor markets are conducive for business operations. The result is often growth of an existing CBD, allowing firms to take advantage of agglomeration economies. Moreover, cities are competitive if they are able to cope with the negative externalities of economic growth, such as exploding land prices, traffic congestion, environmental degradation and social exclusion

Cities across the globe have different approaches to improving their competitive advantage, pursuing collaboration as a means to better serve its economic, environmental and social interests. This is studied in detail by the Global Cities Business Alliance. A desk research of London, Shanghai, Bogota and Sydney has revealed there is a tendency for consolidated and devolved city governments to facilitate dialogue with leading business associations. This approach enables that a consensus is reached between all relevant stakeholders on the future growth of the city. In each case, the city's urban form is a direct result of the decisions of its stakeholders, reflecting their development vision.

Partnerships facilitate a give and take relationship that is crucial to provide an environment where businesses can thrive and harness the resources provided by the city, while contributing to developing the cities as centers for innovation and good places to live. The negative externalities of agglomeration such as rising costs of real estate, pollution, crowding etc. are straining the infrastructure and resources available in the city. The next chapter subsequently pursues the notion that since the agglomerations are a product of business and city needs, both business leaders and city authorities need to have productive dialogues about the future of cities.



# CHAPTER 3. RESEARCH METHODOLOGY

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3.1 Research Proposal

3.2 Research Design

3.3 Operationalization

3.4 Summary

## 3.1 Research Proposal

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### 3.1.1 Problem statement

The literature on agglomeration suggests that urbanization will bring about productivity increases and spur further growth and development. But the process of urbanization, especially when unplanned, brings its own sets of challenges that can be a drag on the productivity that cities supposedly promise. Cities across the developing world, especially in the hyper dense metropolises of Asia, face problems in the forms of congestion, pollution, slums, and environmental degradation. Aside from retarding growth, these problems have real costs to public safety, biodiversity and general well-being of city-dwellers (ADB, 2014).

Urbanization is only predicted to intensify, especially in developing nations. Urban centers will therefore expand, and cities will compete neck-to-neck to improve their economy and maintain a competitive advantage. Corporations look to these growing cities as the places to be. On the flip side, this expansion can lead to agglomeration externalities like high transport and land costs, nuisance effects like crowding and pollution etc. In their paper (Turok & McGranahan, 2013), the negative externalities of agglomeration economies are brought to light by exploring the relationship between urbanization and economic growth. Their research concludes that a balance of agglomeration economy and diseconomy can determine whether a city's economy; measured in terms of percentage increase in GDP, continues to grow, stagnate or decline. It is increasingly important to create an environment that benefits not just the residents, but stakeholders like businesses and the city authority themselves.

The influence of the city on the pursuit of competitive advantage in a particular field is of central importance to the rate of productivity growth and the creation of local employment. Consequently, cities are competitive if they are able to cope with the negative consequences of economic success, such as exploding land prices, traffic congestion, environmental degradation and social exclusion (Srinivas, 1997).

While cities strive to improve their competitive advantage by attracting businesses and people, the urbanization in service sector led cities has left some cities struggling to maintain the quality of life expected by its residents. In Bangalore, companies have threatened to move to other cities due to deteriorating state of infrastructure and increasing pollution (Raman, 2006). The impact of real estate decisions of both

the Government and corporations needs to be understood in terms of how decisions from each perspective are expressed in the city.

Within this strained context of rapid urbanization and agglomeration diseconomies, the research aims to bring to light the contribution of business location decisions and public planning policies to the city's form. The relation between the urban form of a city and its impact on the economics of real estate has been explored in theories of macroeconomic real estate (DiPasquale & Wheaton, 1996). The theory states that broad economic forces like growth and decline of the metropolitan areas economy influence that area's real estate. Clustering of businesses is a major factor that influences the economy of a city. The research strategy is therefore to study the drivers that influence business location decisions in urban areas, and reinforces the hypothesis that these decisions affect the urban form of cities.

### 3.1.2 Hypothesis and research question

The patterns described above lead to the formulation of a hypothesis for research. It is evident that businesses drive the economy of cities to a large extent. Their location decisions within the city heavily affect its urban structure and resources, making corporate real estate a field with immense potential and weight. The hypothesis being tested via the thesis is thus,

*The manner in which a city develops is heavily dependent on the agenda of businesses and their location decisions.*

The hypothesis leads us to a deductive research. The main research question of the thesis is thus,

*“How can an environment of competitive advantage in Bangalore be maintained while tackling the diseconomies of agglomerating businesses?”*

In order to answer the question, a qualitative research is conducted using Bangalore as a case study. The three themes addressed in the main research question contain sub questions that will also be explored in order to answer the main question. The scope of the research is therefore explained in this section.

### 3.1.3 Research scope

The research scope was initially informed by an observation of two cities where the service sector was a major economic driving force, and with comparable physical size of cities. This comparative study led to the conclusion that despite both cities striving to attract and keep

businesses in the city, the strategy translates into different physical forms in the city, largely dependent on the accommodation preferences and decisions of the businesses.

To substantiate the hypothesis, a wider study was done across global cities to understand how these location decisions affected the urban form in other cities around the world. By casting this wider net, it was found that the evolution of a city was largely dependent on the Government's push or vision, and that this was executed with varying degrees of interaction with the private sector. The discovery that a third variable or concept; collaboration, also contributed to how a city transforms itself warranted a study of how the type of collaboration affected the city growth and competitive advantage. The three themes elaborated in Chapter 2 were thus arrived at.

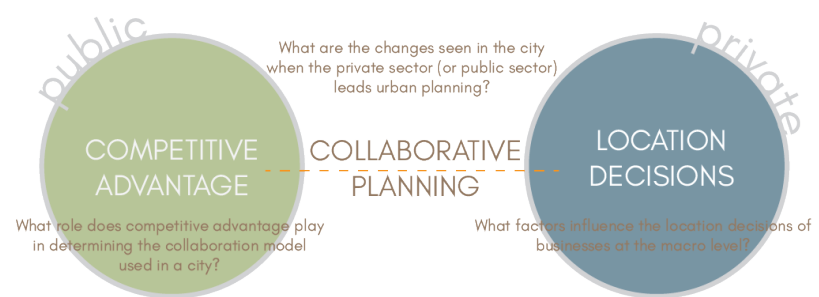


Figure 27: Research themes and scope (own illustration)

### *Theme 1: Business Location Decisions*

Since the private sector is paramount in improving the economy of the city, planning is realized as a direct result of the preferences of the private sector- either by direct collaboration or by consultation. The first theme is thus summarized by answering the question:

What factors influence the location decisions of businesses in Bangalore at the macro level?

- What causes agglomeration of businesses in Bangalore?
- What are the effects of these agglomerations in Bangalore?

### *Theme 2: Competitive Advantage*

The driving force behind decisions on planning is encouraged by the concept of competitive advantage of cities. The determinants of competitiveness highlights how various economic activities and industries tend to get concentrated in a particular urban location for strategic reasons. The third theme is therefore summarized by answering the question:

What role does competitive advantage play in determining the collaboration employed in planning the city?

- How has competitive advantage been pursued?
- How can a certain type of collaboration model enhance the competitive advantage of a city?

### *Theme 3: Collaborative Planning*

In addition to economic considerations, the city has a responsibility to its residents in providing a safe, healthy and convenient environment. Urban structures of cities are resilient, and planning decisions have a long lasting effect. The public sector thus has to satisfy two independent stakeholders- corporations and city residents. The second theme is therefore summarized by answering the question:

What are the changes seen in Bangalore when the private sector (or public sector) leads urban planning?

- What is the institutional framework responsible for planning in Bangalore?
- How do the private and public sector in Bangalore interact in Bangalore?

### 3.1.4 Research intent

<p>theoretical input</p>	<p>To understand the reasons and effects of the economies and diseconomies of agglomerating businesses</p> <p>To trace the development of the urban form in relation to business location decisions</p>
<p>empirical</p>	<p>To draw a <b>pattern of correlation</b> between the themes of business location decisions, collaboration and competitive advantage</p> <p>To determine the <b>type of collaboration model</b> used in selected city case study Bangalore</p>
<p>evaluation</p>	<p>To establish how collaboration models can influence a city's competitive advantage</p>

Figure 28: Objectives of research phases

The empirical research is directed towards categorizing the type of collaboration that exists between the private and public sector in Bangalore. The assumption herein is that the type of collaboration influences the way the city has developed, resulting in private sector benefits over holistic city concerns. By linking the type of collaboration to the observed urban form in Bangalore, the research intends to highlight the missed windows of opportunity for planned and sustainable land development in the city. Each phase of the research as seen in Figure 28 is underpinned by an objective, which determines the method adopted. The methods are subsequently described in 3.2

### 3.1.5 Gap in research

Since cities seek to establish a competitive edge for themselves by fostering a productive business environment, business agglomerations are facilitated in part by the planning regulations, visions and economic environment of the city at the time. These agglomerations are often associated with several negative externalities such as congestion, crowding, high transport and land costs etc. (Turok & McGranahan, 2013). The research proposes to take their theory further by drawing a pattern between the planning initiatives and negative externalities via a comparative study of booming metropolitan cities with established service sector economies. The negative externalities of agglomerations have been studied in depth by the Asian Development Bank in their comparison of six Asian cities (ADB, 2014). Inspiration for their research is derived from their concern for the negative externalities of agglomerations. Their research has characterized urban typologies of cities based on the level of urbanization and the intensity of resource consumption of their economic sectors. The work done by the ADB is thus a valuable tool in

assessing different development options in the context of urbanization, in an attempt to arrive at sustainable development.

The Global Cities Alliance has conducted research on various collaboration models (Global Cities Business Alliance, 2016) observed across global cities. By evaluating the planning approach in these countries, they developed four models based on the nature of Government or private sector initiative. By using their classification of cities as a framework, the thesis aims to shed light on the implication of these collaboration models on the context of the city and its urban form. A link can be drawn on how the quality of life is a result of the vision for the city, and how this vision is realized via a collaboration of the private and public sector. The consequence of private sector led development is hypothesized to create severe negative externalities, which is the scope of this research proposal.

The thesis thus aims to fill the gap in research between business location decisions and their impact of the city. By drawing a correlation between business location decisions, the planning approach adopted to accommodate business (or improve economy) and the resultant impact on the city, policy makers can make informed decisions while formulating regulations and planning objectives for the city. However, sufficient research has not been conducted linking the planning decisions of a city or private sector to the negative externalities of agglomeration. Studying the correlation and direction of causality of these concepts therefore forms the scope of this thesis. The findings can also help to create and opt for development options or collaboration models that result in a balanced environment in the city.

### 3.1.6 Target group

The target group of the research done in this thesis thus includes various stakeholders- policy makers of the Government, planners at the city level, and businesses in the city. The thesis provides a better understanding of the forces in play when considering economic geography, however does not make explicit any policy recommendations. It should be mentioned that though some urban forms may be inefficient, it is difficult to change because of the existing scenario with agglomeration that creates lock in effects. Reshaping the urban landscape is therefore a tough task, and further research in this field is required.

## Key take-away 3.1

- > Competitive cities need to assess their approach in the context of degrading cities
- > There is a research gap between business location decisions and their impact in Bangalore.
- > There is also a gap between collaboration approaches and planning results in Bangalore.
- > The empirical research will be directed towards filling the gaps and assessing the collaboration in Bangalore.

### 3.1.7 Limitations

Feedback from planning authorities and the private sector will hold added value to the findings of the research. However, conducting interviews for both sectors in each would be time consuming. Those sources that could not be reached, particularly more representatives from the State, to complete the interview aspect of the thesis, can be scope for further research.

Furthermore, findings from a case study are hard to generalize and have restricted external validity. The aim is therefore not to generalize, but to generate an extensive analysis of the case, and the quality of theoretical reasoning. The case studies will thus be used to test the theory (or hypothesis) in a specific context. Lessons learnt from other cities can be applied while formulating future policies and development initiatives. These lessons are important in order to improve the real estate value and the economy of those cities facing rapid urbanization.



## 3.2 Research Design

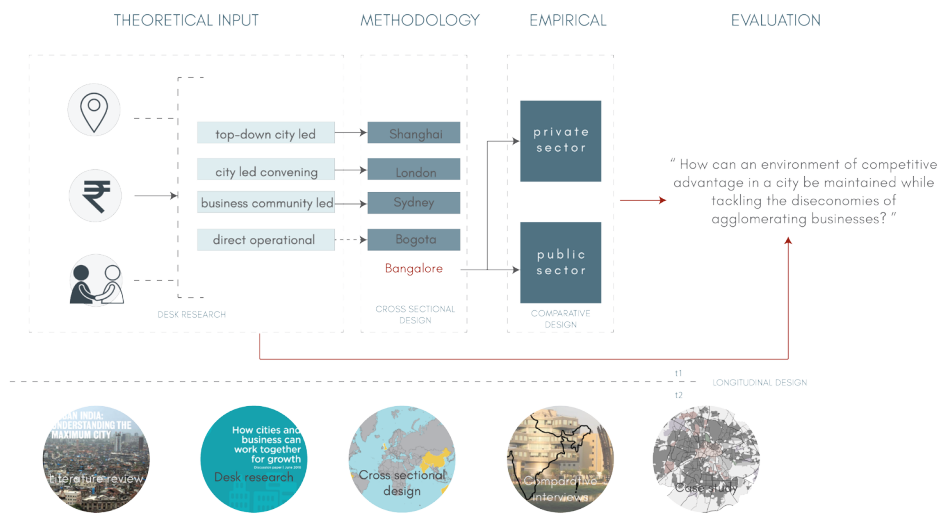


Figure 29: Research design (own illustration)

An overview of the research design is depicted in Figure 29.

### 3.2.1 Theoretical Phase

#### *Desk research*

The research reported in this document has been largely collected via an external desk research, where the data was accumulated from the public domain and research previously done on similar topics. A literature review of the concepts enabled an understanding of the concepts themselves, and their relationship with each other. Both Government published data as well as online data has been used to inform the hypothesis and research scope of the thesis.

The journals and articles were accessed from online databases such as Google Scholar, Scopus and Science Direct. These databases allowed access to several papers from journals including Environment and Planning, Papers in Regional Science, Regional Science and Urban Economics, Urban Economics and Real Estate Markets, Journal of Regional Science, The Annals of Regional Science, Environment and Urbanization. Previous research undertaken by academicians and students alike has been extremely handy in exploring the themes. These include work from academic institutions such as London School of Economics, UCL Bartlett Faculty of the Built Environment, Technical University Delft, Pennsylvania State University. A fair amount of literature was also discovered from the list of citations in other research papers accessed.

Furthermore, given the structural nature of the topics being studied, news articles from established sources like The Guardian, The Times of India and The Hindu have helped to inform the research by reporting on the current situation, concerns regarding city growth and planning initiatives of the Government. From the list of articles that resulted from the keyword search, the selection was further narrowed down based on their title and how often they had been cited. Subsequent filtering of the articles by reading the abstracts allowed a finer selection of literature that would serve useful for the thesis.

The following keywords were used to explore each of the three themes elaborated in Chapter 2

- business location decisions: urban form, spatial structure, agglomeration economies, location decisions, new economic geography
- competitive advantage: city vision, urban competitiveness, competitive advantage
- collaborative planning: private sector in planning, planning policy, service sector led economy, competitive advantage, public private partnerships, collaborative planning, Bangalore

The study of business decisions and city vision in terms of competitive advantage established the importance of collaboration in realizing the vision for the city. Exhaustive research has been found on the various modes of public-private partnerships that have been formed. Of these, the research by the Global Cities Business Alliance (Global Cities Business Alliance, 2016) has been used as a basis to develop a matrix for categorizing collaboration models.

Previous research has documented how the Government in India utilizes policies to incentivize businesses in the city. The research paper by AnnaLee Saxenian has been immensely helpful in this regard, providing a comprehensive overview of the political and economic climate that spurred the growth of businesses in Bangalore, as well as an in-depth study of the policies that were in play. Another study published in the Environment and Planning Journal A has conducted an extensive case study of specific firms in Bangalore, tracking the location decisions of these firms and their spatial distribution in the city. Together, these works have fuelled the thesis to investigate the relationship between the policy reforms and accommodation pattern, by conducting a semi-structured interview of the stakeholders involved in the dynamics.

### 3.2.2 Methodology

Researching a specific case improves theory building, enabling a better understanding of when a theory will or will not hold. Since the direction of causality of location decisions and negative externalities is being studied, case studies come in handy when studying the mechanisms in similar or contrasting environmental contexts (Bryman, 2015). The research design is thus described in this section.

A cross-sectional design entails the collection of data on more than one case at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables which are then examined to detect patterns of association (Bryman, 2015). Due to the limited time available in the thesis year, the research has been largely studied in a cross sectional manner. A cross sectional study captures the situation being researched at a particular moment in time as a snapshot, and is therefore less time demanding and can be used to generate findings quickly (Knight & Ruddock, 2009). In this research, the cities selected have been chosen based on the following criteria

- The cities compared are global metropolitan cities
- Their economy is primarily driven by the service sector industry
- They have distinct urban forms

Whether a causal inference can be drawn between the business location decisions, city regulations and negative externalities associated with agglomeration economies may be able to be determined using a cross sectional research design, especially when compared across cases. The aim is to seek explanations for similarities and differences in the cities in order to gain a deeper understanding of the dynamics of planning and urban form. The method can therefore be used to establish internal validity or causality between the variables.

In order to further study the explorative themes mentioned previously in a specific case, a comparative design (Bryman, 2015) will be used. Put simply, this design entails studying contrasting cases using identical methods. In this research, the comparisons of private sector and public sectors are done in the specific case of Bangalore. The relationship between theory and research is deductive, guided by the questions of the explorative themes.

Since the change in urban form in relation to environmental conditions is being charted over time, the research may be considered longitudinal as well. Studying these structural changes is important in order to understand the dynamics involved in the evolution of the

urban form of the city, and its side effects. Literature and desk research alone was insufficient to prove the causality of which of these concepts contributed to different urban forms. Therefore, the research will subsequently focus on the case of one city where these dynamics have not been sufficiently documented, namely Bangalore.

From the cross sectional desk research of the global cities, Bangalore has been selected as a specific case study to delve further into the topic of collaboration and business location decisions. Researcher Robert K. Yin defines the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not evident; and in which multiple sources of evidence are used (Yin, 1984, p. 23).

Case study is a strategy used to research an experimental theory or topic using set procedures, often comprising several different combinations of data collections such as interviews and documentary evidence, where the evidence is towards investigating a phenomenon within a context (Fellows & Liu, 2015). A case study often adopts the use of triangulation in using three sources of evidence methods (R. Yin, 1994) which allows the researcher to test a particular concept or theory on the basis that a consensus of the findings will yield more robust results. For this reason, at least four sources are used to establish a valid conclusion from the research. These sources will include previous research and interview data, literature reviews, as well as interviews conducted by the author.

### 3.2.3 Empirical phase: Interviews

The empirical research is conducted in a qualitative manner, with a large part of the data being collected via semi-structured interviews with professionals from the private and public sector to investigate business location decisions and competitive advantage respectively. The investigation and interviews were approached with the intention of drawing a conclusion of how the two sectors interact with each other. Appendix II lists out the interviewee details. The interview protocol for the different stakeholders can be accessed in Appendix III. A summary of the interviews is in Appendix IV. Subsequently, the questions broadly cover the topics of the direction, motive and nature of collaboration bearing in mind that each sector is either largely influenced by where they want to operate (business location decisions for the private sector) or how they seek to improve the economy (competitive advantage for the public sector). The two concepts are intricately connected in that each party needs to work together in order to gain the most, making collaboration crucial for mutual benefit.

#### *Developing the interview*

The unstructured interview approach (Knight & Ruddock, 2009) has been selected for this research as it allows concepts to emerge as the interviewer explores the topic with the respondent. This is often referred to as qualitative interviewing, since the information collected is not amenable to statistical analysis. The qualitative research interview seeks to describe and understand the meanings of central themes in the life of the respondent. They therefore get the story behind participant's experiences. Furthermore, the thesis follows an exploratory method that is supported by the unstructured interview, whose protocol is available in Appendix II, when there is a lack of empirical evidence or understanding of the concepts. Given the exploratory nature, the probability that the research can yield unexpected finding is relatively high and is welcome in this case where sufficient studies of the present nature of affairs is not extensive.

To assess the type of collaboration that exists, the following sub questions are addressed by means of a semi-structured interview and data from previous research.

- Who initiates the collaboration on planning issues?
- What level of Government most interacts with the private sector?
- What is the nature of the collaboration?
- What is the frequency with which interactions take place?
- Are the discussions formal or informal?
- What kind of outcomes has the interaction resulted in?
- Were collaborations initiated for financial investment reason...?

These sub questions have been grouped into three categories as explained in 3.3.3 and developed into a list of criteria that can be coded.

#### *Conducting the interview*

The interviews in this research are conducted as an open-ended exchange of concepts and opinions, focused on the topic of location decisions and collaboration. All the interviewees were approached via email correspondence by providing an abstract of the research topic. Subsequently, an outline for the interview was sent to them to allow the interviewees to prepare for the topics that will be discussed. Considering that some of the topics were of a sensitive nature, it was especially helpful in the case where the interviewees needed to confirm with their professional seniors about what could be discussed. This back and forth allowed the interview to be formulated better, and know which topics required a different approach to generate findings.

The interviews are only used as an information source from the point of view of the two sectors. For the private sector, their location decisions can then be traced alongside the national and state level policies that were in place at the time. This helps establish a correlation between the planning policies of the Government and the location decisions of the firms.

The interviewees were approached based on their professional experience and knowledge on the themes being researched. Consequently, planners, developers and private business representatives were approached for an interview. A complete list of interviewees is described in 4.4

#### Key take-away 3.2

- > Theoretical phase of research largely comprises desk research
- > Methodology phase includes cross sectional design, longitudinal design
- > Empirical phase is conducted using a comparative design between sectors in the case of Bangalore
- > Semi-structured interviews serve as data source

## 3.3 Operationalization

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Each theme is summarized by addressing a sub research question as explained in 3.1.3 . This chapter will elaborate on how the research is operationalized to arrive at relevant findings.

### 3.3.1 Business location decisions

*What factors influence the location decisions of businesses in Bangalore at the macro level?*

The relationship between business location decisions and the urban form in the case being studied, the aim is to determine whether the decisions have directly resulted in a particular spatial distribution within the city. This causality helps establish the factors that morph the city structure, and whether it is a direct result of corporations or it is an indirect result of the agenda of the Government and its policies. The causality will be established via a literature review of previous research that has been conducted, as well as via the interview protocol, which is explained in the following sections.

### 3.3.2 Competitive advantage

*What role does competitive advantage play in determining the collaboration employed in planning the city?*

By questioning the motive for collaboration through the interviews, a link between the competitive advantage of a city can be linked to attracting businesses, and their preferences in accommodation (location decisions) as seen in Figure 30. Since the assumption is that business decisions effect urban spatial structures, therefore competitive advantage of a city affects urban spatial structures, via accommodation decisions of a business.

The theme of competitive advantage is further discussed via a comparison of other global service sector dominated cities. These cities portray examples of how competitive advantage encourages Government authorities to pursue policies for growth, influencing the location decisions of the firms in the city. Consequently, the resultant urban form is assessed. Drawing this pattern of correlation can allow policy makers to make informed decisions on interaction with the private sector early on in the planning process.

### 3.3.3 Collaborative planning

What are the changes seen in Bangalore when the private sector (or public sector) leads urban planning?

By using the interviewees and previous research as sources, the type of collaboration model used in the city can be established. This is done by developing a criterion matrix that operationalizes the features of a particular model. This matrix has been developed by using the framework of the GCBA as a base, with further modifications done on the basis of the literature review. Subsequently, each criterion serves as a check for the strong presence or absence of a particular feature of the model.

The sub questions mentioned in 3.2 were subsequently classified into three broad purposes as seen in Table 4, which when answered would help identify the type of collaboration that exists.

Table 4: Classification matrix (own illustration)

Criterion framework for determining the collaboration model		Purpose	Feature	Criteria	Values	
		Driving agent	What was the direction of the initiative?	Business led		Strong business presence Investment from private Active participation of businesses in city issues
City led				Presence of consolidated city authority City initiates discussions with private sector	Yes/ no/ inconclusive Yes/ no/ inconclusive	
	Hybrid			Centralized planning Citizen empowerment Multiple tiers of government	Yes/ no/ inconclusive Yes/ no/ inconclusive Yes/ no/ inconclusive	
Motive	What was the motive for collaboration?		Strategic		Government strategy Business strategy Knowledge sharing	Yes/ no/ inconclusive Yes/ no/ inconclusive Yes/ no/ inconclusive
			Operational		Project based collaboration Investment sharing Infrastructure improvements	Yes/ no/ inconclusive Yes/ no/ inconclusive Yes/ no/ inconclusive
				Outcome (dialogues translated into action)	Planning Industry policy Tax incentives	Yes/ no/ inconclusive Yes/ no/ inconclusive Yes/ no/ inconclusive
	Nature			What was the nature of collaboration?	Mediated collaboration	presence of third party mediators Interaction with government/ private sector
			Nature		Formality	Organised/ adhoc/ both
					Frequency of meetings	Not frequent/ frequent/ very



Table 4 indicates the operationalization of identifying a collaboration model. Each purposive question explained previously is comprised of features. Each feature is then determined by 2-3 criteria. By filling out the table based on data collection from the interview sources, we can identify which feature is predominant. To validate the feature as strongly represented, the feature must indicate a presence of a majority of criteria.

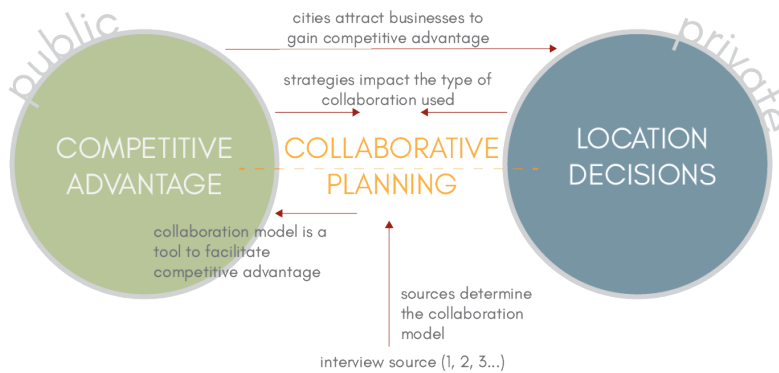
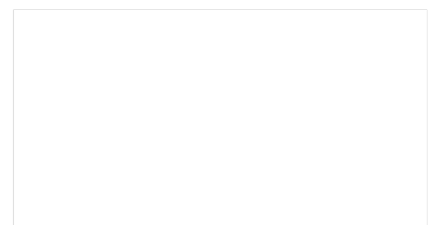


Figure 30: Interrelationship between competitive advantage and collaboration model in a city (own illustration)

Furthermore, the evaluation developed by Global Cities Business Alliance depicted in Figure 15 will also be used to evaluate the findings and argue for or against a specific type of collaboration model. The framework developed by GCBA is also explained in 2.3.3

Key take-away 3.3

- > Each theme is investigated with a central question in mind
- > The causality between location decisions and urban form is investigated
- > Competitive advantage is explored in the context of collaboration between businesses and Governments
- > A matrix is developed to assess the type of collaboration in Bangalore



## 3.4 Summary

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In order to answer the question of how competitive advantage can be maintained while tackling the diseconomies of agglomerating businesses, a qualitative research is conducted using Bangalore as a case study. By linking the type of collaboration to the observed urban form in Bangalore, the research will highlight the missed windows of opportunity for planned and sustainable land development in the city.

Three themes are explored in the thesis- business location decisions, competitive city advantage and collaborative planning. Business location decisions are investigated via interviewing the private sector, whereas competitive advantage is primarily explored through public sector interviews and literature sources. The two themes are inextricably linked through collaborations, which are investigated across both sectors.

The thesis thus addresses various stakeholders in the private and public sector. By using the framework of collaboration developed by the Global Cities Business Alliance, the type of collaboration that exists in Bangalore is analyzed through various interviews. The interviewees thus serve as rich data sources to feed the collaboration matrix. Together, the data collected will determine the type of collaboration existing in Bangalore. The assumption herein is that the collaborative planning method adopted is dependent on the location decisions of the private sector, as well as the comparative advantage pursued by the city Government. It has already been established that the competitive advantage of a city is largely viewed as a function of the business investment and environment created. This dependent relationship between the public and private sector is the essence of the empirical research explained in the following chapter.

## CHAPTER 4. EMPIRICAL RESEARCH

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4.1 A Case of Bengaluru

4.2 Institutional framework

4.3 Towards a collaborative approach

4.4 The road ahead

4.5 Interviews

4.6 Summary

## 4.1 A Case of Bengaluru



Figure 31: Location of Bengaluru (adapted from

Bangalore (local: Bengaluru) is a booming metropolitan city in southern India, the capital of the state of Karnataka (Figure 31). Famously referred to as the Silicon Valley of India, Bangalore boasts a huge chunk of IT and software companies from across the globe.

### Bengaluru city statistics

Location	Karnataka, India
Economy	Service sector industry- Information Technology (IT)
Metropolitan region area	1300 sq.km
Population	10.4 million (2015)
Average density	8000 persons/ sq.km.

### History

Bangalore is one of the fastest urbanizing cities in India. The urban density gradient illustrates radial pattern of urbanization for the period 1973 to 2010 (Figure 32). Bangalore grew radially from 1973 to 2010 indicating that the urbanization is intensifying from the central core and has reached the periphery of the Greater Bangalore (Ramachandra, Aithal, & Sanna, 2012). Although spurred on by immense Central Government investment in public sector industries after India's independence in 1945, the rapid urbanization today can also be credited to the large service sector industry that provides jobs to millions in the city.

### Urban competitiveness

The city's emergence as a center for IT stems from the Government of India's (GoI) decision post-independence to strategically locate sensitive industries away from international threats on the borders and coasts. Bangalore therefore became home to the Indian air-force base and other public sector institutions, prompting the establishment of numerous technical universities (Holmström, 1994).

Realizing the potential that Bangalore offers to the electronics industry, the Government of Karnataka's Electronic Development Corporation (KEONICS), launched Electronics City in late 1970's. Located 22km south east of Bangalore center in the peripheral green belt, infrastructure for the 332 acre campus was developed by the Karnataka Industrial Investment Development Corporation (KSIIDC). Electronics City is home to some of the big names in the IT industry (Srinivas, 1997). The campus also houses several residential

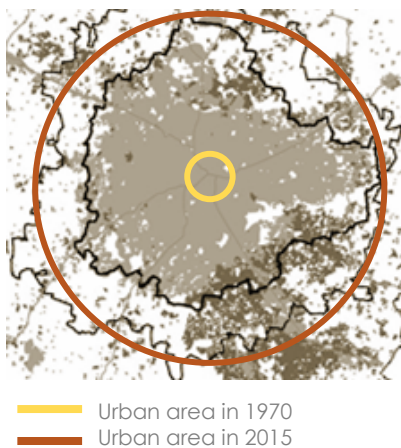


Figure 32: Urbanization in Bengaluru (adapted from Bangalore Master Plan, 2015)

developments and schools, catering to the residents and employees of Electronics City. The evolution of the Bangalore IT cluster is credited to the entry of Texas Instruments (TI) in the mid 1980's, indicating the potential of offshore business. Overall, the success of TI increased interest amongst several other US based It companies, including Hewlett Packard, later interviewed for this research.

A far reaching shift in policy from 1991 paved the way for economic liberalization and lesser involvement of the State in the economy. This led to offshore investment in India by multinational companies-thronging to cities like Bangalore (South African Cities Network, 2016). By mid-1990's, the internet revolution coupled with several tax benefits encouraged several foreign and domestic IT companies to establish in the city. The universities therefore provided a large pool of highly skilled labor for the companies to tap into. Studies related to urban competitiveness in India have categorized Bangalore as a Tier I city for its investment attractiveness, and an A+ grading on city prosperity, governance, business environment, infrastructure and quality of life index (Singhal et al., 2013). All of these factors have pushed Bangalore to become the preferred location for several IT companies to set up shop.

#### 4.1.1 Urban structure of Bangalore

Bangalore's urban function is the renowned IT and related services sector, which thrives on both foreign company investment in the economy, as well as the birth of several domestic national level firms. Studying the business location decisions in Bangalore begins with understanding how the city has attained its competitive edge. Urban competitiveness is a function of economic and strategic determinants. Economic determinants can further be divided into factors of production, infrastructure, location, economic structure and urban amenities. The strategic determinants are mainly Governmental effectiveness, urban strategy, institutional flexibility, and private-public sector cooperation (P. Kresl & Singh, 2012).

#### Note

Data presented in this chapter is also supported by the empirical data collected from interviews, where indicated.

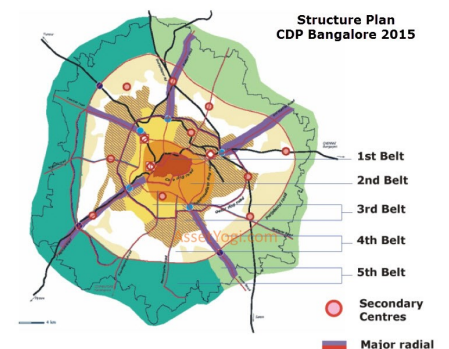


Figure 33: Urban structure of Bangalore (Bangalore Master Plan, 2015)



Figure 34: Planning pattern of Bangalore in rings, as per 2015 master plan (BDA, 2017)

Figure 33 depicts the current urban form of Bangalore. Concentric development around the CBD is observed, which is limited by a green belt on the periphery of the city. The plan also shows the presence of secondary centers, which are usually commercial and/or business districts. At least seven business clusters can be identified across the city, outside of the CBD. The urban form seems to be a hybrid of concentric development around a CBD, but with additional interspersed sub centers located at a distance from the CBD.

Land use distribution in the city is guided by the current master plan 2015. However, under the Karnataka Town and Planning Act 1961 (Government of Karnataka, 1961), a ‘change of land use’ can be achieved after applying for the same with the Bangalore Development Authority. This permits a change in land use in the master plan- from residential or agricultural land to commercial (Representative from BDA, 2017; Representative from BMRDA, 2017). As explained in 5.1.1, this has allowed secondary business centers to dot the green belt and periphery of the city. Furthermore, national policy has condoned and encouraged peripheral development and privatisation of infrastructure (Kraas, Aggarwal, Coy, & Mertins, 2013). Incentives of high quality telecommunication infrastructure and commercial space to firms prompted many firms in the city to move to the suburbs and even the periphery of the city (Jacobs, 2012)

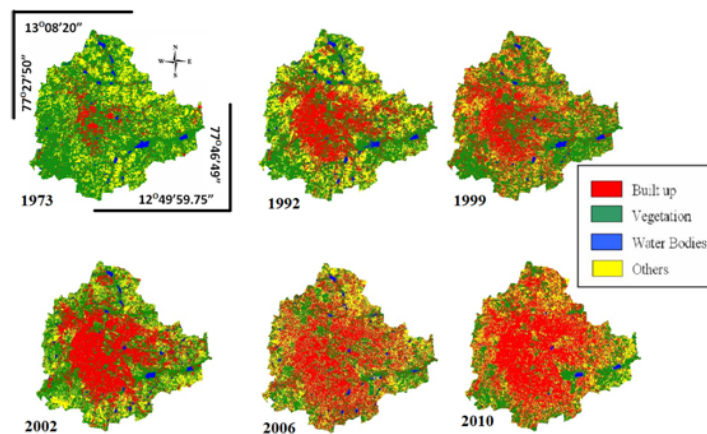


Figure 35: Land use change in Bangalore (BBMP, 2015)

*Business agglomerations*

As mentioned previously, Bangalore has displayed rapid urbanization since the 70's. Figure 35 depicts the built up area distribution. The distribution of land use and population density has helped identify the clusters of business agglomerations in the city. This identification aligns with the business districts identified by Knight Frank, listed in

Business District	Location
Central Business District (CBD) and off-CBD	M.G. Road, Residency Road, Cunningham Road, Lavelle Road, Richmond Road, Infantry Road
Suburban Business District (SBD)	Indiranagar, Koramangala, Old Airport Road, Old Madras Road
Peripheral Business District (PBD) East	Whitefield
Peripheral Business District (PBD) South	Electronics City, Bannerghatta Road
Outer Ring Road (ORR)	Hebbal ORR, Marathahalli ORR, Sarjapur Road ORR

Figure 38: List of business districts in Bangalore (Knight Frank, 2015)

Figure 38 and illustrated in Figure 40.

It is observed that of the business districts listed, all districts, apart from the historic Central Business District, are dominated by one or more large techparks that cater to the IT businesses in the city. The ORR and SBD lead the office market share due to increased and sustained interest by occupiers (Figure 37). This is accredited to factors such as the dearth of office space in the CBD and off-CBD areas, as well as the availability of quality office spaces in the IT parks of the region (Knight Frank, 2015).



Figure 36: Bagmane Techpark at SBD

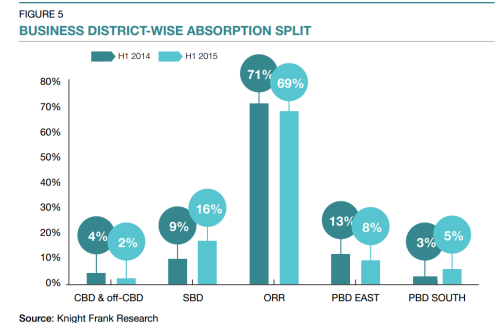


Figure 37: District wise office space absorption in Bangalore (Knight Frank, 2015)





Figure 39: Wipro Floating Learning Center in Electronics City

The IT (Information Technology)/ ITeS (Information Technology enabled Services) sectors therefore become a key demand driver of the city’s office market, dominating by a 50% share. The Bengaluru office market has the lowest vacancy in the country, and leads the way with highest office space absorption as well. This is credited to the increased corporate interest by both global and domestic companies in the IT and e-commerce sector (Knight Frank, 2015).



Figure 40: Business districts in Bangalore (Knight Frank, 2015)



#### 4.1.2 'Nuisance effects' in the city

Rapidly growing cities in the BRICS, including Bangalore, experience problems of growth. These include infrastructure pressures, energy shortages, rapidly rising land and property prices, growing accommodation needs and increasing levels of congestion (South African Cities Network, 2016). The average population growth from 2010-2015 is a rapid 3.96%. Many firms in Bangalore claim that the city's (unorganized) growth has had a detrimental effect on its climate, and that rapid expansion, inadequate infrastructure and increasing congestion on the roads of Bangalore has considerably reduced the overall appeal that a favorable physical climate had to offer earlier (Srinivas, 1997). Other researchers have established that poor infrastructure conditions can have dramatic effects on economic productivity (Dowall & Clarke, 1996), highlighting the importance of addressing these issues so as to protect the competitive advantage of Bangalore.

#### *Population explosion*

Bangalore has witnessed an unprecedented growth and population explosion in the last two decades. It is the largest urban metropolis in Karnataka, and has witnessed a 47% growth rate of population from 2001-2011 was change of 47.18 percent in the population as per 2011, compared to population as per 2001 (Census India, 2011; Representative from BMRDA, 2017). The population distribution as of 2011 depicted in Figure 41 indicates that the most densely populated regions have a range of 40,000- 1,20,000 persons per sq.km. as of 2011. The density of the urban agglomeration of the city is 8700pp/sq.km whereas the core city is 10,100pp/sq.km. (South African Cities Network, 2016).

Bengaluru Metropolitan Area (BMA) is spread over 1200 sq.km. Employment potential, amenable climate and availability of infrastructure facilities are the major reasons for the steady increase of population. Projections say that the next growth peak will be around 2021 or 2031(BMRDA, 2015), the occurrence of which is likely because of,

- Future development policies from the Government
- Private sector's participation in future growth
- Growth and development of IT
- Evolution of another city in Karnataka that will ease the pressure on Karnataka.

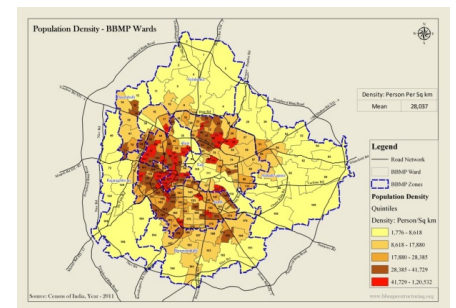


Figure 41: Population distribution in Bangalore (Census India, 2011)

Despite having above-average per capita incomes, the high price of the land and amenities in Bangalore Metropolitan Region (BMR), a result of the exponential development of the city, have created areas of poverty housing millions (Sudhira, Ramachandra, & Subrahmanya, 2007). Slums are therefore a significant feature of the Bangalore urban landscape (ADB, 2014). The city's infrastructure is lagging behind even the current population of the city.

#### *Crumbling infrastructure*

Being a relatively young city in terms of planning, the city is unable to keep pace with the population growth and the infrastructure demands that come with it. Solid waste management remains a problem with up to 20% of garbage being uncollected (South African Cities Network, 2016). There is an acute shortage of drinking water, and flooding sewerage systems become a problem especially in monsoon. The city faces chronic power failures, forcing many firms to use their own power generating systems.

#### *Traffic congestion*

Bangalore has been a highly successful city in economic terms but there are significant challenges. Infrastructure has become strained owing to rapid growth of the city. With the rising affluence of the middle class, car ownership has dramatically increased, putting a strain on roads. Despite metro lines and elevated expressways to industrial townships, the city faces massive road congestion with frequent gridlock (South African Cities Network, 2016). Traffic to Electronics City, one of the largest business clusters, can vary from half an hour to a grueling three hours from the city center.



Figure 42: Daily congestion at ORR

#### *Land costs*

In 1995, land cost in Bangalore was considered fairly important by the surveyed domestic firms notwithstanding the fact that land and property prices have increased many folds in recent years (Srinivas, 1997). Corporate driven land grabbing is growing since the city center is saturated and corporates pay high costs to have a share in the pie. Therefore, secondary centers on the periphery are now the preferred office destinations. They are often located in close proximity to large-scale residential developments since these serve as employment residential catchment areas. With the rapid urbanization and industrial development, availability of space at a reasonable cost is a crucial concern.

Companies in the city have threatened to move to other cities due to deteriorating state of infrastructure and increasing pollution. To

combat these city woes, several tech firms in the city have suggested that corporate entities should play a part in improving infrastructure based on Government specifications. In the 90's, the Bangalore Development Authority (BDA) recognized the civic deficiencies caused partially by Bangalore's industrial success. The BDA tried to encourage more private-sector involvement for infrastructure development, especially transport (Allen, Massey, & Pryke, 2005). Some such initiatives like the Software Technology Parks of India (STPI) and Bangalore Agenda Task Force (BATF) are described in the following sections 4.2.3 and 4.3.2 .

## Key take-away 4.1

- > Several strategies for competitiveness have been implemented in Bangalore, sponsored by the State.
- > It is a popular destination for IT and ITeS companies owing to the rich labor pool.
- > Urbanization has outpaced infrastructure development and improvements in the city
- > Prevalent negative externalities of agglomerations threaten the competitive position of Bangalore

## 4.2 Institutional framework

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### 4.2.1 Public sector

To understand how the public sector operates in Bangalore, it is necessary to have an overview of the Government structure of the country. India possesses a three-tiered Government- Central, State and Urban Local Bodies (ULB's) or the City Government. This structure allows for a strong national Government, and considerable autonomy to states, but extremely weak local Government since the administrative and decision making authority rests at the higher level (Kochanek & Hardgrave, 2007; Sami & Anand, 2015; Weinstein, 2009). This section describes each of the tiers of Government, and the bodies that are responsible for planning and policy changes impacting the growth of the IT sector in Bangalore.

#### *Central Government*

The industrial and economic planning of the country is entrusted to the Department of Commerce and Department of Industrial Policy and Promotion housed within two ministries at the center- Ministry of Commerce and Industry, and Ministry of Finance. However, the Ministry of Urban Development is also involved in planning, but is not well co-ordinated with the others, therefore policies are often implemented in isolation (Sami & Anand, 2015).

#### *State Government*

State Governments are responsible for constituting municipal Governments, approving master plans allocating central Government funds etc. KSIIDC is. Arranging meetings of the industrialists and other related bodies to study industry problems/issues. Karnataka State Industrial Investment and Development Corporation (KSIIDC), established in 1964 by the Government of Karnataka, is the designated agency that plans and formulates proposals for infrastructure development projects like industrial Parks/Townships Industrial Growth Centre (KSIIDC, 1964). Through their parastatal bodies, they also plan and finance urban infrastructure, housing, and transport. The state Government is therefore responsible for urban development matters.

#### *City Government*

Under the 74th Constitutional amendment in 1992, decentralization devolved power to elected Urban Local Bodies (ULB's) at the city level. These parastatal agencies or ULB's are responsible for providing infrastructure and services, and mobilizing the required financial

resources through user fees and taxes (Buch, 1987; Sami & Anand, 2015). In practice, however, city Governments play a limited role over these expanded functions, partly because the allocation of functions and devolution of powers was left to the discretion of state Governments.

The Bangalore Metropolitan Region Development Authority (BMRDA) is the autonomous body in charge of preparing a structure plan for the larger Bangalore Metropolitan Region, encompassing urban and rural Bangalore. In addition, the Bangalore Development Authority (BDA) is the principal planning authority in the city entrusted with the task of preparing the Master Plan and Comprehensive Development Plan (CDP) for Bangalore city and its environs as per the Karnataka Town and Country Planning Act, 1961 (Government of Karnataka, 1961). Along with the administrative body Bruhat Bangalore Mahanagara Palike (BBMP), they look after civic and infrastructure requirements. Other bodies like the Metropolitan Planning Committee also participate in the Master Plan, with a view to give a voice to the citizens and other stakeholders as well (Mahendra, Harikrishnan, & Krishne, 2010).

#### 4.2.2 Policies as instruments for growth

Following the FDI policies that have opened the market to industrialization, the growth of Bangalore has been largely driven by an influx of foreign capital concentrated in IT services. This section will highlight a few subsequent noteworthy examples of mandates and policies affecting business development and growth, particularly in Bangalore. An overview of the various policy changes that contributed to the emergence of the Bangalore industrial cluster is depicted in the appendix I. So, what prompted firms to establish Bangalore as the preferred destination for businesses? An in-depth study conducted at the University College of London (UCL) (Srinivas, 1997) classifies the factors that have attributed to the city's booming economy we witness today into 3 categories:

- Government related: immense support received from the Government in terms of incentives for occupation, tax subsidies, and ease of setting up business
- City related: presence of several technical institutions and labs that provide a rich labor pool
- Others: geographical location, climate

The study indicates that Government support and availability of high technology professionals account for nearly 50% of the location

interest factors expressed by the surveyed firms in Bangalore. The study, explained further in 4.2.3, only reinforces the importance of public policy in influencing occupier preferences for firms in Bangalore.

As mentioned previously, urban development matters have been assigned to the State Governments, and under the 74th Constitutional Amendment Act (CAA), further delegated to the ULB's (Government of India, 1992). This being established, the Government of India (GoI) plays a much more important role in exercising its influence to shape the policies of the country. In addition, it also allocates resources to the State Governments through various schemes. Therefore, indirect effect of the fiscal, economic and industrial location decisions of the GoI exercise a far more dominant influence on the pattern of urbanization and real estate investment in the country. Between 1984-86, policies to encourage the import and development of any kind of software goods were developed (Saxenian, 2000).

#### 4.2.3 Bangalore as an IT destination

Since the 80's, Bangalore has been the top choice for several IT companies- both domestic and foreign. A field survey of IT firms in the city has shown that a majority of software companies chose Bangalore as their headquarters mainly because of the availability of a large pool of low cost professionals (Srinivas, 1997).

Interestingly, while the Government has attempted to spur interest in Bangalore by setting up the Electronics City in the 80's, and Special Economic Zones (SEZ's), explained in 4.2.4 and 4.2.5, many firms do not credit these to a locational consideration for Bangalore. This is not to say that both domestic and foreign firms do not avail of the tax concessions and benefits, either from the State or the Center (Srinivas, 1997). Credit to Bangalore being a preferred choice is given to the fact that it is home to a large pool of professionals and skilled labor, and several IT agglomerations. Furthermore, one of the strongest reasons for firms wishing to establish themselves in Bangalore, is due to excessively high prices of property and rents both in Bombay and Delhi.

While the different types (based on ownership- Foreign, Joint Venture or Domestic) of firms have expressed their own priorities for being in India, the most important reasons are availability of highly skilled professionals at internationally competitive prices, liberalization of the Indian economy, and large untapped domestic market for IT products and services. Favorable state government policies, explained in 4.2.4 and 4.2.5, to attract the IT industry has also borne fruit over time. An

overview of the survey results conducted by previous researchers (Srinivas, 1997) is accessible in Appendix V, indicating other centripetal forces that have attracted companies to the city.

#### 4.2.4 Software Technology Parks of India (STPI) 1991- 2009

The Software Technology Park of India (STPI) scheme introduced by the Department of Electronics and Information Technology facilitated the shift from US to off shore service provision in India. STPI was a Government owned and operated program that assisted in the development of technologically advanced office space for hi-tec companies interested in establishing operations in Bangalore. The concept focuses exclusively on the information technology sector (Gascó-Hernandez, 2009). STP's provided necessities like high-speed satellite links and reliable electricity to designated tax exempted zones in the city in order to encourage the growth of firms. Firms thus operating in the STP are allowed to import all equipment without duty or import licenses, and 100 percent foreign ownership is permitted in exchange for a sizable export obligation (Saxenian, 2000). While STP's can be established by anybody, anywhere in the country, in 1990 the Department of Electronics (DoE) announced Bangalore as one of the first three, thus fueling the growth of Bangalore as the Silicon Valley of India.

In 1991, the Software Technology Parks of India (STPI) was registered as an autonomous agency, reflecting the desire of the DoE to avoid direct Government involvement in the industry. The local directors of the individual STP's included leading industry representatives. The Information Technology Park, Ltd. (ITPL) in Bangalore, for example, is a partnership between the Karnataka Government, Tata Industries and a consortium of Singapore firms that have been interviewed for this research.

#### 4.2.5 Special Economic Zones (SEZ's) 2005- current

Inspired from East Asian experiences, The Government of India has remained focused on developing specific industrial and economic policies to encourage export oriented industrialization, seeking to create new economic settlements like SEZ's, National Investment and Manufacturing Zones (NIMZ's) and industrial corridors. Although these instruments are envisioned by the central Government, their implementation rests with the states (Sami & Anand, 2015) in India. A special economic zone (SEZ) is a geographical region that has economic laws that are more liberal than a country's domestic economic laws. Usually the goal of a structure is to increase foreign



direct investment by foreign investors, typically an international business or a Multi-National Corporation (MNC).

The Government of India passed the SEZ Act in 2005 to attract domestic and foreign investment, promote exports, create employment, and develop infrastructure. Under the SEZ Act, the Government provides financial incentives within the zones, including duty-free import of goods, income tax exemptions, as well as tax incentives to SEZ developers. In addition, the Government also assisted with land acquisition, and expedited the process of granting approvals through a single window clearance. The SEZ Act was premised on the assumption that these incentives would make these zones attractive to developers as well as to potential investors, thus allowing the Government to rely on private sector developers to build the requisite infrastructure. Approval for establishing SEZ's was submitted by the developer through the state Government to the different central ministries (Sami & Anand, 2015) mentioned as described previously.

SEZ's were first witnessed in China as a means of opening up the economy to FDI using financial incentives. The main difference with its application in India is that in India, the entire development of SEZ's including infrastructure provision, was the responsibility of private developers. This is in contrast to China, where the SEZ's were financed and developed by the Government directly (Sami & Anand, 2015). This relationship between business elites and the Government has long been criticized (Asha, 2005) as pursuing a pro-growth agenda that causes a compromise in the use value of land for its exchange value on the market. Since private developers are entrusted with the responsibility of developing the land in the SEZ's, the Government becomes beholden to a private market driven development agenda (Logan & Molotch, 1987).

As these new spaces of production emerge, challenges of governance, planning and policy arise with them. These spaces are often created through industrial policy mechanisms and governed by various industrial and economic agencies, instead of being governed as urban areas with elected local Governments according to the provisions of the 74th Constitutional Amendment Act (CAA). As Indian policymakers prepare for an urban transition that is industry- and services-led, they increasingly believe that this transition will be driven by these settlements that lie outside existing urban centers as well as outside the purview of existing arrangements for urban governance, and Government schemes and programs targeting cities. Consequently,



these settlements function as spaces of exception, economically (Ong, 2006), as well as in terms of governance, and there is little thought given to the implications of the transformation of these newer spaces into more urban-like settlements. Furthermore, The Twelfth Plan (2012-2017) for India focuses on cluster and regional industrial development (Sami & Anand, 2015). Five-Year Plans (FYPs) are centralized and integrated national economic programs, premised on the concepts of planning.

SEZ's in India have been criticized because over 56% of the country's SEZ are focused on IT and its related services, resulting more in a relocation of firms rather than generation of new economic activity. Due to its salubrious climate, geographically well protected boundaries and longstanding history with housing established technical universities, Bangalore boasts the largest piece of this pie with 14 such SEZ's, making it a popular destination for several domestic and foreign IT companies housed in techparks. These include the prominent ITPL, Manyata Embassy Business Park, Bagmane Tech Park, Electronic City and several others along the Information Technology (IT) corridor of Outer Ring Road (ORR).

## 4.3 Towards a collaborative approach

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In the spirit of competitive advantage, state and city Governments are becoming more entrepreneurial and are constantly striving to make their region or city attractive to businesses, using land as a key resource to facilitate economic development (Xu & Yeh, 2005). As the 'state' in its various forms appropriates land in and around Indian cities, it sanctions certain developmental agendas over others. For example, state Governments have been assisting large corporations to acquire large parcels of land on the urban periphery for various uses ranging from developing the aforementioned SEZ's and industrial parks to large integrated townships and business campuses (Searle, 2010). This shift has set the stage for future partnerships between the private sector and the Government in an effort to create more livable cities.

### 4.3.1 Wake up call

The Government has started recognizing the need for delivering an efficient urban infrastructure in order to achieve an excellent urban system. This is also in alignment with the International Financial Institutions (IFI's) like the World Bank, Asian Development Bank and United Nations Development Programme promoting Public- Private Partnerships (PPP's) as a panacea to overcome failures in urban development in developing countries. A PPP can be defined as 'working arrangements based on a mutual commitment between a public sector organization with any organization outside of the public sector' (Bovaird, 2004). The private sector in the context of PPP's can refer to corporate bodies, consulting firms, contractors, maintenance companies, private investors etc. The Government has thus adopted the PPP's as a critical element in the urban reform policy (Asha, 2005).

Cities that are performing to a high level are those that are advancing partnerships between public and private sectors, promoting the role of public administration and business sectors to facilitate competitive advantage (Singhal et al., 2013). Urban governance in India is particularly challenged with a plethora of bodies that have overlapping responsibilities thereby making it difficult to stand behind any one development initiative.

Urban regeneration is delivered by increased coherence of urban policy at the national and regional level, by equipping local authorities to make strategic decisions about their regeneration priorities to better target investments, and creation of conditions that allow the local

authorities and their partners to establish project delivery bodies that can get the work done (Singhal et al., 2009).

Secondary cities within the state of Karnataka have been in the pipeline, envisaged by the autonomous planning body under the Government of Karnataka, the Bangalore Metropolitan Development Authority (BMRDA), with a view to build ring roads and light railways connecting these towns (Allen et al., 2005). This section will cover a few of the partnerships that have been initiated by either/both the Government and the private sector. Schemes that have attempted to bring together the three tiers of Government are also covered here.

#### 4.3.2 Bangalore Agenda Task Force (BATF) 1999-2004

One such PPP that was established to tackle the problems of rapid growth was the Bangalore Agenda Task Force (BATF). Under the BATF, policy making at the city level approached a PPP on an on demand basis. The body was established under the approval of the Chief Minister of the state, and was spearheaded by the leading domestic software company in the city- Infosys. The BATF was established based on an idea that corporate entities had a role in urban governance and could benefit the city through sharing of ideas and best practices in an efficient and transparent management approach (Raman, 2006).

It was thus meant to be a partnership between the citizens, corporates and the ULB's including the BBMP, BDA etc. Spearheaded by leading software company Infosys, it brings together key private players from various fields. Together, they contributed to the city's development by means of broad based knowledge input, financing and policy initiatives. This politically mandated 'extra-Governmental organization' shifted the power from the state into the hands of private entrepreneurs.

A World Bank representative has recognized that the growth in Bangalore has been led by private entrepreneurs from the IT industry and has credited the BATF model of civil society to being a suitable model to be employed in other cities and countries. Even though the BATF was authorized by the Chief Minister of the state, it was funded through private channels. The intention of the task force was to take advantage of expertise of the knowledge institutions based in Bangalore to reverse the trends of deterioration caused by rapid growth in the city.

The BATF was criticized for lacking vision for the city as it was driven by private interests and was not accountable to any other Government body for its actions. While allowing a productive and inviting atmosphere for the corporates amidst the several techparks and IT corridors, this mechanism also allowed them to be selective about the urban issues they addressed, which could point toward the crippling infrastructure woes plaguing the cities today.

BATF was dissolved in 2004 with the change in Government. Since then, the members have managed to maintain their links with the central Government and managed to gain audiences to discuss their agenda. The BATF thus initiated a reform in the fragmented three-tier Government witnessed in India, and served as a model for urban reform by bringing the Bangalore Agenda to the national level. With the intention of nationalizing the policy objectives that were begun by the BATF, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), eponymous with the first prime minister of India, has since been established by the central Government.

#### 4.3.3 Jawaharlal Nehru National Urban Renewal Mission (JnNURM) 2005-2014

The Ministry of Urban Development launched the Jawaharlal Nehru National Urban Renewal Mission (JnNURM) in 2005 (Meshram, 2006). Implemented over seven years, the JnNRUM entails investment partnerships among the central Government, state Governments and urban local bodies vis-à-vis a City Development Plan (CDP). This CDP is a vision document required only for selected cities, outlining their future development and attributes in terms of competitive advantage. Bangalore is categorized as one of the National Priority City (NPC) by the Government of India (Ministry of Urban Development, 2005).

As per the JnNURM, 50% of the funding for the execution of the CDP for a mega city such as Bangalore is required to be sourced by the state Government via loan from international financial institutions or private banks, their co-operation and faith is essential. In this regard, the IFI's reinforce increased regulation and private sector engagement in order to improve the credit worthiness of the borrower. This requirement on the part of the IFI's instigates the Government to seek out partnerships in as many initiatives as they can gain support in (Asha, 2005).

JnNURM has been recognized for its ability to enable Government, industry, developers and investors to assess the growth potential of

cities for making informed decisions on investments (Ernst and Young & Federation of Indian Chambers of Commerce and Industry, 2007). However, the mission was criticized for unsatisfactory implementation and slow progress and was subsequently replaced by the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) in 2015. The mission aims to continue and improve the work started by the JnNURM.

#### *Other committees*

Following the success of the BATF, each change of State Government initiated a different task force comprising of elected representatives, industry representatives and urban experts in equal measures. These task forces like the ABIDE (Agenda for Bengaluru Infrastructure and Development Task Force), Bangalore Vision Group, and Bangalore Metropolitan Planning Committee (BMPC) take charge of infrastructure related issues in the city. However, these initiatives are criticized for being extra-constitutional, and have not been met with as much enthusiasm as the previously elaborated BATF. Consequently, their achievements have also been under the radar, questioning the private sector involvement in the city today.

#### 4.3.4 IT industry associations

The strong business presence is illustrated by the achievements of the software industry association National Association of Software and Service Companies (NASSCOM) set up in 1988. Even after the pace of liberalization slowed in the rest of the economy in the mid-1990s, the software industry continued to benefit from a series of sector-specific policy reforms. This was largely due to aggressive lobbying by NASSCOM (Saxenian, 2000). They have been influential in shaping the Department of Electronics (DoE) strategy of working with software companies to provide critical infrastructure, while explicitly avoiding more detailed regulations or intervention. This is evident, for example, in the decision to organize the STPI program as an autonomous unit, and eventually to privatize it. The National Information Technology and Software Development Task Force of 1998 was a high-powered group that included senior representatives from the private sector, Government, and universities. Comprised of representatives from NASSCOM as well as leading companies Wipro and Infosys, the task force provided policy recommendations for the future growth of IT industries.

#### 4.3.5 New investment regions

##### Key take-away 4.3

- > IFI's have prompted the Government to adopt collaborative planning approaches with the private sector
- > Local authorities need more power over land policies to combat urban decay and infrastructure woes
- > BATF and JnNURM are some collaborative initiatives, but a change in Government has dissolved these bodies

The Bengaluru International Airport Ltd. (BIAL) is an upcoming industrial region on the periphery of Bangalore. Spurred on by the new international airport, several residential communities and commercial estates have cropped up in the region. Now, the Information Technology Investment Region (ITIR) is one of the largest proposed infrastructure projects in Karnataka's history. Development will involve a Centre-State partnership in conjunction with private partners. The Centre provides basic infrastructure such as road, rail and telecommunication links. The State will provide physical infrastructure and utilities, including power, water, sewerage and effluent treatment facilities. Over 55 multinational IT companies including Infosys, Wipro, TCS, and Cognizant have signed MOUs (The New Indian Express, 2010). The ITIR is set to overtake California's Silicon Valley in terms of size and scale (The Hindu, 2014). The Vision Group, spearheaded by Infosys, mentioned earlier, has been providing valuable inputs to the State Government in taking up initiatives in Tier II and Tier III cities elsewhere in the state.

## 4.4 The road ahead

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Though Bangalore is now recognized as the Silicon Valley of India and is a preferred destination for multinational investment in ICT, it does not rank as a global innovation hub (South African Cities Network, 2016). However, it is moving up the value chain and becoming a desirable location for corporate research laboratories. As of today, the advantages of Bangalore include the substantial concentration of domestic and international corporations, along with the knowledge spill overs that this presence brings, over 100 R&D centres in the city, diverse cultures, plentiful venture capital funding, vibrant start up culture and a cluster of highly reputed universities. However, there are challenges including infrastructure deficiencies, explained in 4.1.2 , lack of large research institutions, lack of robust industry-academy partnerships, overall national challenges in innovation, risky overdependence on ICT (South African Cities Network, 2016).

However, there is a real threat to the competitive position of Bangalore as an IT destination. In 1997, several firms indicated that the level of infrastructure availability would not support further growth unless immediate steps are taken to improve the infrastructure provision in the city. This sentiment is shared by an interviewee who was questioned for this thesis, expressed in 4.5 . A previous field survey conducted on the IT industry in Bangalore has highlighted that when questioned about the future of Bangalore, firms state despite its problems Bangalore is more attractive than other cities in India. This is attributed to its strong center for high technology and Better telecommunications infrastructure (Representative from HP, 2017; Srinivas, 1997). Bangalore being nicknamed the Silicon Valley of India, it is apt to point out that IT firms in California are not compelled to go to Silicon Valley due to the absence of other options, but for the advantage of being in the Silicon Valley. In the current scenario, Bangalore is a choice of the best among the worst.

On the flip side, some firms opine that Bangalore's future is uncertain as a preeminent center for IT industry, as IT firms are moving out of Bangalore. BPL Electronics and Infosys Technologies both have decided to start their new expansions away from Bangalore in Pune. In light of these concerns, the Government has made several efforts to attract and retain the companies, sanctioning numerous SEZ's as explained in 4.2.5 , as well as investing in infrastructure improvements across the city, some of which are highlighted in 4.3 .

## Key take-away 4.4

- > Bangalore can lose its competitive position to cities in other States because of crumbling infrastructure issues
- > Firms are looking toward cities with developed infrastructure and strong local Governments such as Chennai, Pune and Hyderabad to set up new campuses

With India's national economy now booming and Bangalore well established position in the ICT sectors, its prospects seem good, but it is facing rising competition from cities such as Chennai and Hyderabad in neighboring States (Representative from HP, 2017; South African Cities Network, 2016).



Figure 43 gives an overview of the growth witnessed in Bangalore when mapped against the industrial policies explained previously.

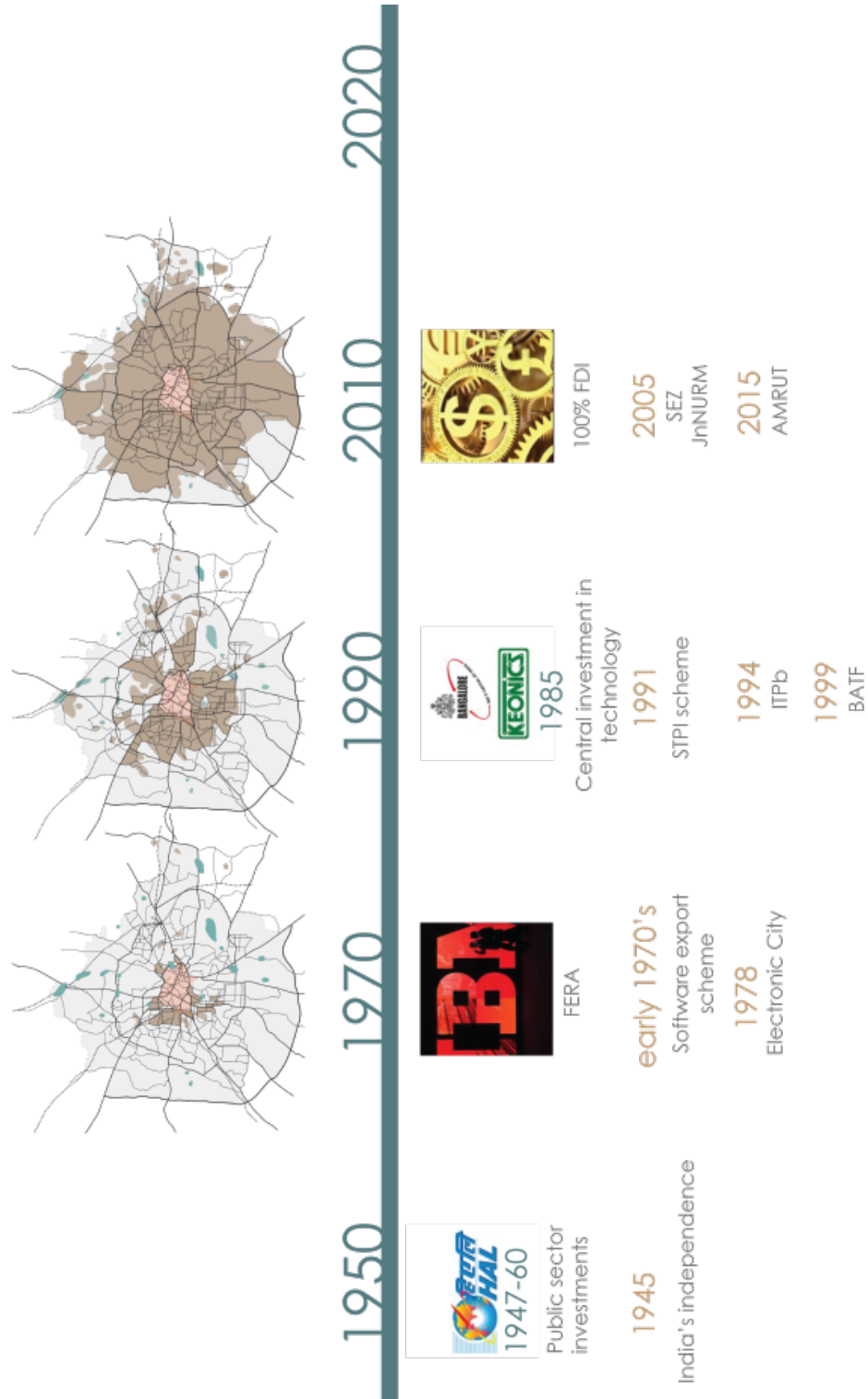


Figure 43: Overview of policies affecting structural changes in urban and industrial growth in Bangalore (own illustration)

## 4.5 Interviews

The important associations involved in decision making have been explained in 4.2.1 . Representatives from each tier and association have been contacted for the purpose of the interview. Eight subjects were approached for the interview of which four have responded thus far- Hewlett-Packard, Ascendas-Singbridge, Royal HaskoningDHV and National Institute of Urban Affairs. The data has been collected through a semi-structured interview with the subjects mentioned earlier. In addition, general discourse with experts in the field have also provided valuable input into the research. The subjects approached are representatives of both the public and private sector, as well as consultants and developers who operate in between the two sectors as an agent (Figure 44). This broad sample ensures that several facets of the relationship is examined, contributing to the validity of the topic being considered. The interview protocol is attached in the appendix, as well as a summary of the interview itself. This chapter will briefly introduce each interviewee.

### Note

Since the intention of the thesis has not been to generalize findings and has been primarily explorative, the range of interviewees is limited. Further interviews will reinforce the findings of this thesis.



Figure 44: Interviewees within sector and across sectors (own illustration)

### 4.5.1 Ascendas- Singbridge

Ascendas is a Singapore based business space solutions provider, which established the first IT park in the country- the International Tech Park, in Bangalore. The techpark was created as a result of a joint venture between India and Singapore in 1994 under the STPI scheme described in 4.2.3 . They have since bought Tata's share, becoming the largest shareholder at 94 per cent, with the balance held by the Karnataka Government through Karnataka Industries Areas Development Board (KIADB) (Our Bureau, 2005). In 2015, Ascendas merged with Singbridge Pvt Ltd, a major player in large scale integrated sustainable developments to form the Ascendas-Singbridge Group (BuildoTech Magazine India, 2015).

Located just 18 km from the city center, the International Technology Park Bangalore (ITPB) is a 69 acre (28 ha) integrated development with office space, retail mall, hotel and host of amenities.

#### 4.5.2 Hewlett-Packard (HP)

The Hewlett-Packard Company is an American based multinational information technology company. For several years, HP was the World's leading PC manufacturer. HP was among the first two foreign companies to set up shop in Bangalore in 1991 (Representative from HP, 2017), the other being Texas Instruments (TI). Bangalore was the most investor friendly city for many multinationals, and the temperate climate only spurred their decision to operate here. Most of the operations premises of HP are located in the major SEZ's of the city like Bagmane Tech Park in CV Raman Nagar, Salarpuria GR Tech Park in Whitefield (near ITPB- International Tech Park Bangalore), Electronic City Phase II and Pritech Park on ORR. In 2015, HP split into HP Inc. Responsible for printers, pc's and other hardware, and HP Enterprise (HPE) for enterprise products and business services. The real estate consolidation following the company restructuring is currently underway across all accommodations in Bangalore, and other cities where HP operates in.

#### 4.5.3 Royal HaskoningDHV

Under the Bangalore Development Authority's jurisdiction, Royal HaskoningDHV (Bharadwaj, 2014) has been appointed to draft the new master plan 2031 for Bangalore. RHDHV is a Dutch based project management consultancy providing services in infrastructure design as well. General discourse with one representative from the company indicated that the process of planning in the city has been subject to a variety of collaborations (Representative from RHDHV, 2017):

- Known collaborations such as the provision of consultancy services, PPP's, joint ventures, special purpose vehicles, advisory services by think-tanks
- Undocumented collaborations between Government bodies and private agencies such as institutional bypasses, misrepresentation, discretionary planning via multiple agencies, acts and mandates

In a city where roles are indistinct and responsibilities are blurred, these undocumented collaborations have had a considerable but poorly

understood impact on city development. The company has undertaken research on investment regions, infrastructure etc. in discussion with the private sector.

#### 4.5.4 Institutional expert

With a background in planning, the institutional expert works together with RHDHV to navigate the Government and policy framework in Bangalore.

#### 4.5.5 National Institute of Urban Affairs (NIUA)

NIUA is an autonomous organization under the Ministry of Urban Development (MoUD). They undertake projects for the central Government as well as conduct independent research with the help of external funding agencies and philanthropic groups. 40% of the NIUA is funded and therefore answerable to the MoUD. A large part of their research for the Government is mandated as part of the institute's ties with the MoUD. The research they conduct covers various fields of urban affairs including policy development for sustainable cities, white papers for policies, timeline for the schemes, transport proposals, planning goals, capacity building for Government agencies at the state and city level etc. (Representative from NIUA, 2017)

#### 4.5.6 Bangalore Metropolitan Region Development Authority (BMRDA)

Bangalore Metropolitan Region Development Authority (BMRDA) is an autonomous Urban Local Body created by the Government of Karnataka. They are responsible for planning, co-coordinating and supervising the areas within the Bangalore Metropolitan Region (BMR) which comprises Bangalore Urban district, Bangalore Rural district and Ramanagara District. The BMRDA is therefore in charge of the entirety of 8000sq.km. of land in and around Bangalore city limits. They are assigned with creating the structure plan, from which the master plan takes its inspiration. Another Government body, explained in the next section, creates the master plan.

#### 4.5.7 Bangalore Development Authority (BDA)

The BDA is another Urban Local Body (ULB) or city level Government body in Bangalore. It is the principal planning authority for the city, delegated with drafting the master plan. The BDA is currently in the process of drafting the master plan 2031 in consultation with Royal HaskoningDHV.

## 4.6 Summary

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Investments in education during the pre and post- independence period paid off when Bangalore became the focus of state sponsored industrialization process. Bangalore was subsequently put on the map because of the large IT sector, giving it the nickname ‘Silicon Valley of India’. At least six business clusters can be identified across the city, dominated by IT companies. However, the lack of alignment in planned business centers of the master plan and the existing business centers on ground is very evident when the two maps are compared. This discrepancy begs the investigation of Bangalore’s real estate development and its companies business location decisions, especially in the wake of the infrastructure woes plaguing the city.

The growth of businesses in Bangalore can be chalked up to influence primarily from the Central and Karnataka State Government. While the Central Government formulates policies for industrial growth and economic reforms, the State is assigned with the responsibility to implement these policies, often translating into planning decisions and investments. This encouraged the development of technology parks in the periphery, especially along a technology corridor. Furthermore, the State’s IT policy has facilitated the location of offices anywhere in the jurisdiction of the BDA, permitting a change in land use for any non-commercial property. For the developers as well, exemptions are permitted if the development is custom made for IT firms as per the Millennium IT Policy in 2011.

IT firms have therefore enjoyed a buyer’s market for commercial space, heavily incentivized in terms of not just space provision but tax benefits as well, all under the state policy. Though ULB’s are dedicated with the task of drafting the master plans, they have a limited role to play in land related issues. Moreover, the responsibility for planning, development, and financing of SEZs rests with private developers, while the Government assists with land acquisition, provides tax and other financial incentives, and expedites the process of granting approvals.

PPP’s such as the BATF and JnNurm were undertaken due to stimulus from international funding agencies likes the World Bank and Asian Development Bank, who encouraged partnerships in exchange for funding for various initiatives. However, the on ground reality was that the weak public sector was unable to prioritize and develop a comprehensive vision for the city in the wake of a strong push from the

private sector. The following chapter reports the findings from the interview that has shed insight into cross-sector collaboration and real estate development in the city. The findings are subsequently directed in answering the research question of the thesis.

# CHAPTER 5. EVALUATION

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5.1 Reporting Findings

5.2 Reflecting Findings

5.3 Thesis

5.4 Summary

## 5.1 Reporting Findings

The pattern of agglomerations in the cities studied forms the frame of reference in the thesis. Through a comprehensive desk research of various cities, it is concluded that several factors can be attributed to the current observable urban form of a city. The result is not restricted only to regulations that permit or curb growth, but historical and cultural factors that shape the environment in which the economy grows or declines.

Semi-structured interviews with several representatives of both the private and public sector in Bangalore were conducted to further explore the three themes central to this thesis. The interviewees, and their background, have been introduced in 4.4. Findings from these interviews are reported in this chapter.

### 5.1.1 Business Location Decisions

Most of the interviewees confirmed the presence of a strong business community in Bangalore. Communication with a representative from Ascendas-Singbridge, a leading developer of IT parks in India, emphasized that IT parks like the ITPB in Bangalore have spearheaded Bangalore's growth to become the Silicon Valley of India. These IT parks provide a complete 'work-live-play' environment for IT and technology-related businesses, housing information technology, biotechnology, electronics, tele-communications, R&D, and other IT-related companies.

Whitefield is part of the Peripheral Business District (PBD) as identified by Knight Frank (Knight Frank, 2015), home to several Special Economic Zones. The most prominent IT park is the ITPB, developed by Ascendas-Singbridge. Their representative further elaborated that as a joint venture with the Karnataka Industrial Areas Development Board (KIADB) of the Government of Karnataka, the company is continuing its contribution in developing Whitefield as the IT hub in India's Silicon Valley (Ascendas-Singbridge, 2017).

When questioned on location preferences, the representative from Ascendas-Singbridge explained that the choice of selecting ITPB as a hub for IT is credited to the master plan 2015. The master plan assigned a Hi-Tec zone to Whitefield, with an Export Promotion Industrial Park (EPIP). The ITPB campus therefore falls under this zone. However, a comment by an urban planner at RHDHV opposes that of private developer Ascendas-Singbridge. As he explains,

#### Note

Of the subjects interviewed, the representatives from Hewlett-Packard, Ascendas-Singbridge and the National Institute of Urban Affairs have requested to remain anonymous. Findings from their interviews are therefore anonymously reported in this chapter.

Other interviewees were open to being quoted. Appendix II lists out the interviewees in detail.



businesses and developers choose their locations on their own, the master plan is not really consulted. However, the master plan does influence centers of development to some extent. Other public sector representatives from BDA and BMRDA also confirm his view. They all credit this free-for-all development to the legally permitted change of land use.

The interview with a representative from HP puts forth another perspective into why peripheral locations have been selected for SEZ's—a lack of space. The interview revealed that the nature of IT and related services require a huge workforce, and subsequently demands a massive floor space to house the employees. Therefore, the space demands can just not be met within the city limits, making peripheral locations a preferred choice. In addition, real estate in the city center is unaffordable for several companies. Over time, amongst other leading companies like Wipro, HP themselves have moved out of city center locations for unaffordability reasons. This factor is also confirmed during the interview with an institutional expert who consults the Government on planning and policy issues (Institutional expert, 2017). The unaffordability for both residents and companies has caused a sprawling urban growth in the city, making peripheral locations a forced choice rather than a planned one.

Further investigation on company preferences for locations within the city, the HP representative elaborated that occupier preference is largely affected by the stimulus provided by the Government to locate in a specific area. The stimulus may be in the form of tax benefits, planning policies, or industry related policies (Representative from HP, 2017). Together, these instruments trigger the agglomeration of several such businesses that receive similar incentives, thereby forming a business district. Ultimately, the businesses sustain themselves by the economies of agglomeration such as a shared knowledge base and large pool of skilled labor. Many of these IT parks function as self-sufficient entities, providing amenities that support living including medical, leisure and security. In addition, they provide a crucial uninterrupted power supply to the companies, ensuring smooth operations (Ascendas- Singbridge, 2017).

At a national level, the interview with an institutional expert who consults with the Government and urban planners in the city reported that the presence of a large number of SEZ's have pushed Bangalore in becoming an IT destination (Institutional expert, 2017). During the interview, it was discovered that SEZ's are a guideline from the Center, therefore the cities do not actively incorporate them into the master

plan. SEZ's are put forth by the State, who also do not interact with the City or consult the master plan. This aspect of retrospective planning was raised as a point of concern, since an ideal scenario would involve an alignment in planning (Institutional expert, 2017). When questioned on why there is a lack of alignment, the interviewee replied,

*“Timing is the issue here, but the larger problem is they do not talk to each other. The industry department is promoting the SEZ, and doesn't know, or care, that the BDA is making the master plan. They are not concerned if the SEZ sits well in the plan or not.”*

Discussions about the new master plan 2031 that is being drafted by Royal HaskoningDHV revealed that the private sector has indeed been consulted on preferences for location. Furthermore, these interactions were considered prudent since many of the techparks follow a phase wise development, indicating that there will likely be an expansion of office space. This will require an infrastructure to support the expansion. These discussions have helped identify areas that need attention in the master plan. For example, ITPB currently operates half a million sq.m. of mixed use space within 69 acres, and has a further development potential of about 0.2 million sq.m.

On probing about the location of SEZ's and the lack of alignment with the master plan, one interviewee commented about the private companies and even the Karnataka Development Board,

*“They don't care... wherever they get land, they want the land use to be converted even if the infrastructure doesn't support it.”*

He further elaborated that the ULB's are left with no option but to follow the decisions of the private sector and State (Representative from BDA, 2017). In many cases, the land suggested as techparks just isn't viable.

*“...infrastructure is an afterthought.”*

This fact is also confirmed by another interviewee who stated that the State works independent of the master plan (Institutional expert, 2017).

The SEZ's allow foreign entities to operate as if they were back home (Representative from BMRDA, 2017)

Ex- urban planner at BMRDA elaborated on Bangalore as an IT destination by stating that despite its drawbacks, when conducting a cost benefit analysis, the demand from companies sustains Bangalore's

IT sector. This is reflected in the extremely low office vacancy rate of 4%, the least in the entire country.

### 5.1.2 Competitive Advantage

However, a bleak response was received from several of the interviewees when questioned about Bangalore's future. All interviewees confirmed that for the foreseeable future, Bangalore will remain a preferred destination, due to a lack of choice more than anything else (Representative from HP, 2017). Bangalore sees a stupendous growth in population every year, 300-400,000 persons p.a. (Representative from RHDHV, 2017). Even the Government seems halfhearted when asked about sustaining the growth,

*"We don't think we can save the city, but we want to contain it and make it livable. We don't have any hopes that Bangalore will become a city for everyone- it just isn't possible now due to the infrastructure problems."*

Competitive advantage pushed the Government to pass several economic reforms to allow the growth of IT in India. As explained by a representative from HP,

*"In the 90's, our Government was very forward thinking in their vision towards developing the economy."*

For Bangalore, several central Government initiatives were drafted and executed to invite foreign capital to the country. The policy reforms right from the 1980s facilitated the emergence of an export-oriented software industry in India. Bangalore became the hub of this concentrated capital due its salubrious climate, safe distance from potential hostile borders and presence of highly skilled work force, facilitating the establishment of SEZ's and techparks that are now home to a multitude of software and IT related businesses.

*"This status of Bangalore is credited to the State's push to brand Bangalore. Bangalore has gotten a name for itself as the IT capital of India, not by chance."*

### Urban competitiveness

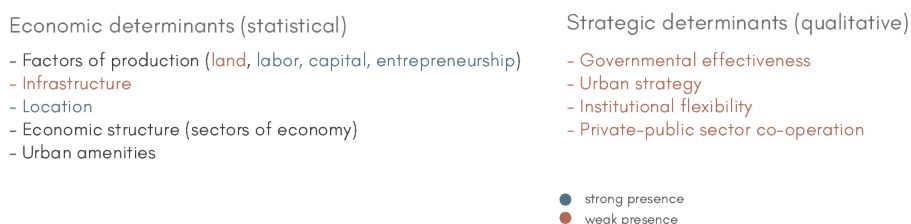


Figure 45: Determinants of urban competitiveness (own illustration, adapted from Kresl and Singh)

Urban competitiveness can be explained as a function of economic and strategic determinants (P. K. Kresl & Singh, 1999) as seen in Figure 45. The interview with HP as well as previous research interviews of other companies (Srinivas, 1997) demonstrated that the locational aspects of Bangalore, specifically the climate and presence of a vast and diverse cohort of both domestic and international companies make it a preferred destination for businesses looking to operate in India. Previous research has reported that the affordable real estate rents in Bangalore as compared to other Indian cities were a huge driver for business ventures in the city. Most importantly, domestic IT firms state the availability of high tech professionals as the first reason for choosing Bangalore (Srinivas, 1997).

As confirmed by a representative from HP, the three Marshallian externalities of knowledge spillovers, thick labor markets and market size effects all have a strong presence in the city, allowing the growth of a strong IT agglomeration (Representative from HP, 2017). A comment made by urban planner at RHDHV highlighted that what would keep Bangalore a competitive city is better connectivity. Research by their firm while drafting the master plan 2031 revealed that businesses are looking for a transport infrastructure that supports their expansion.

### 5.1.3 Collaborative Planning

Over time, the approach to collaborations has shifted toward being open to collaboration with the private sector. This structural change can be attributed to several reasons that include the Government's realization that the sector possesses the knowledge and the capital required to implement development plans and improvements.

#### *Driving agent*

The representative from HP indicated that the central Government took several measures to ensure the software industry had a favorable environment in which they could operate. This is in line with previous research that attributed the growth of IT and related businesses to Government initiatives and policy developments. The interview also indicated that most interactions about industry policies that have impacted the company's location decisions occur at the central Government level, with interactions with the State Government for obtaining approvals when a new office is set up (Representative from HP, 2017).

This perspective from an IT company opposes that of representatives from the local public sector who believe that many decisions are driven by businesses. As stated by the Additional Director of Town Planning in Bangalore,

*"Yes, of course. The IT people run the show in Bangalore. I mean, speaking economically."*

The fact that businesses direct city planning is also confirmed by a representative from RHDHV, who explained that while Governments regulate growth, they do so while being driven by businesses.

#### *Motive*

As indicated by the interview with NIUA, the central Government is heavily involved in policymaking and initiatives, like the STPI and SEZ. The Government has an obvious interest in improving cities to attract investment from foreign funds (Representative from NIUA, 2017).

Discussions with the project manager for the master plan 2031 revealed that the private sector has indeed been consulted on preferences for location (Representative from RHDHV, 2017). Furthermore, these interactions were considered prudent since many of the techparks follow a phase wise development, indicating that there will likely be an expansion of office space. Expansion will require infrastructure to support it, motivating a dialogue between the

Government and businesses. These discussions have helped identify areas that need attention in the master plan. For example, ITPB currently operates half a million sq.m. of mixed use space within 69 acres, and has a further development potential of about 0.2 million sq.m. (Ascendas- Singbridge, 2017).

A majority of the interviewees explained that the collaboration with the private sector is crucial for financial reasons. As explained by urban planner at RHDHV, despite being private developments, the Government invests in the IT parks during the development stage. As stated by a representative from the Bangalore Development Authority (BDA),

*“We cannot avoid this, they have to be involved in developing the infrastructure. It isn’t possible by Government alone.”*

An interesting example of private led- collaboration is the proposed metro line along the ORR (Representative from RHDHV, 2017). This supposed Government infrastructure project has been spearheaded by all the IT companies along this ORR business district, and will be funded almost entirely with private money and international funding agencies like the European Investment Bank (EIB). Even more peculiar is that the project was initiated by the companies themselves, as they approached the Government to integrate the metro line into the master plan 2031. This project is in its final stages of approval. The interviewee goes on to explain that since the companies themselves stand the most to gain from the project, their contribution is the most. The Government welcomes this initiative.

#### *Nature of collaboration*

The interviewees had differing views on the nature of collaboration between the private and public sector. Some interviewees like the representative from Royal HaskoningDHV, a former urban planner with the BMRDA and an institutional expert on governance raised concerns that the private sector was too involved at the urban level of Bangalore. They believe that private sectors exercise control without consideration of development concerns, facilitated by their ties to the higher levels of Government. In fact, one interviewee (Representative from BMRDA, 2017) even emphasized that,

*“The extent of collaboration has been detrimental to development.”*

However, they all reported that the private sector, particularly the IT companies are involved in several city issues and infrastructure projects. The Government as well as the private sector initiate these interactions,

which occur both formally and informally. Especially when concerning the master plan 2031, several stakeholder consultations have been conducted already, in an effort to involve the businesses (Representative from BDA, 2017),

*“We are proposing new suggestions to improve coordination between existing Government agencies, and of course participation of private companies.”*

These collaborative efforts are undertaken in light of the Government’s realization that they are unable to tackle urban issues alone, and need the support of the private sector, albeit financially. This is also supported by information from RHDHV, who commented that many issues warrant a discussion with the private sector, so it is done.

Table 5 summarizes the findings of the interview, which subsequently help in determining the type of collaboration that exists in Bangalore. As described in 3.3.3, in order to determine the type of collaboration existing between the public and private sector, several criteria were identified.

There was a unanimous agreement that the business community in the city was a dominant and driving force for many initiatives, and development patterns of Bangalore. Additionally, they were also a recognition that the City lacked strong authority. Most respondents also agreed that the Center and State had more power in planning than the City. This centralized planning indicates that most initiatives at the City level are business led.

All respondents also agreed that collaboration was perceived as a strategic choice for the private sector, and most agreed that the Government also interacted with the private sector at a strategic level. However, this strategic collaboration does not happen with the City, but with the State or Center instead. Table 5 therefore indicates a strategic motive in collaborations. However, an operational motive is also identified. This is because the public sector representatives that were interviewed stated that at the City level, interactions with the private sector do occur on a project basis, particularly for infrastructure projects. The outcomes from collaborations with the Center and State have resulted in policies as mentioned in 0

However, the on ground reality was that the weak public sector was unable to prioritize and develop a comprehensive vision for the city in the wake of a strong push from the private sector. This resulted in a

## Key take-away 5.1

- > A strong business community directs the sprawling urban growth pattern, supported by the State
- > City authorities struggle to provide infrastructure because of overlapping jurisdictions
- > Private developers pursue decisions without regard to the master plan
- > State is credited to Bangalore's competitive advantage as an IT destination
- > There is lack of dialogue between businesses and the City regarding accommodation in the city
- > Collaboration across sectors is prominent at the higher level of Government, resulting in fruitful developments

sprawling development pattern, and a crumbling infrastructure network (Royal Haskoningdhv Consultant, 2017).

All interactions that take place were considered direct and formal, with no third party involvement. However, there were some comments from several interviewees about deals that were done under the table, indicating that this information of the nature of collaboration may not be valid.





## 5.2 Reflecting Findings

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### 5.2.1 Revisiting the sub questions

#### *Theme 1: Business Location Decisions*

*What factors influence the location decisions of businesses in Bangalore at the macro level?*

- What causes agglomeration of businesses in Bangalore?

Firstly, policies from the Center have instilled interest in India for IT operations, and Bangalore has been put at the forefront due to both the Center and State strategies. All interviewees confirmed that strong policy development should be credited to creating Bangalore as the IT capital. These policies are largely economic reforms concerning FDI and exports, but also include physical planning initiatives like the STPI and SEZ that prompt setting up of techparks that subsequently attract businesses.

Secondly, Bangalore holds several advantages to companies seeking to locate. The massive skilled labor pool and temperate climate are the primary attractions here. This aspect is supported by interviews in previous research as well (Srinivas, 1997).

Thirdly, existing agglomerations of IT companies only spur further expansion, taking advantage of the increasing returns to scale. Both the private companies and the representatives from Government also agree that the image of Bangalore as an IT capital only encourages more companies to come to the city.

Overall, the research has indicated that at the macro level, various strategic and operational drivers have influenced the firm's accommodation decisions.

- Government's strategic vision and support
- Availability of skilled labor pool
- Accommodation costs of real estate
- Tax subsidies and operating incentives
- Geographical factors

- What are the effects of these agglomerations in Bangalore?

All the interviewees recognized that Bangalore is growing unsustainably because of IT agglomerations on the periphery of the city, and admitted that the infrastructure is not able to support it. Problems such as traffic congestion, crowding, lack of solid waste management, affordable housing and sufficient power supply are rising.

The sprawling growth is only expected to continue, as confirmed by the Government representatives as well as the institutional expert. Low-rise, high-density development will probably continue as explained by urban planner at RHDHV. However, efforts to contain it are being made, by trying to regulate land developments and insisting on minimum requirements for any future plotted developments. Aspects such as green space, road networks, sufficient water etc. will be emphasized to ensure a sustainable and livable space. However, this is still in the pipeline, and until passed, piecemeal-plotted developments will continue to spread.

#### *Theme 2: Competitive Advantage*

*What role does competitive advantage play in determining the collaboration employed in planning the city?*

- How has competitive advantage been pursued?

The reason that Bangalore has become the base for successful international and national competitors in the IT industry can be attributed to successful central and state Government involvement in promoting the city as a conducive environment for conducting business. It can be concluded that the influence of the Government on the pursuit of competitive advantage has a direct relation to the rate of business interest in the city, and employment growth as a direct result of this. The research findings indicate a strong presence of the economic determinants of competitive advantage in the city- knowledge spillovers, labor pool and forward and backward linkages..

Unfortunately, infrastructure provisions have been overlooked. As elaborated in 2.2.2, competitive advantage also concerns a city that is able to generate factor conditions like adequate infrastructure. Cities that have degrading physical environments will lose their competitive edge- Bangalore is on the precipice of being one of these cities.

However, the State looks toward Bangalore as one city that drives the economy of the entire state of Karnataka. Their vested interest allows the development of even more SEZ's in Bangalore alone, under the pretext of economic gain. This bias has led to several other cities being

pushed to the background- there is no 'competition' for Bangalore when economic aspects are concerned. It can be one of the reasons why sufficient attention has not been paid to infrastructure concerns.

- How can a certain type of collaboration model enhance the competitive advantage of a city?

Firstly, the interest on the part of the Center and State in using the IT industry to increase the GDP has prompted them to actively involve industry representatives while passing policies and initiating schemes.

Secondly, all the interviewees from the public sector, as well as the consultants, have reported that the private sector is needed to financially support growth in the city, and several collaborations have been pursued to this end. Their involvement is especially crucial in infrastructure projects. However, they are skeptical about the private sector involvement in planning aspects. This is particularly odd when looking at the extent of private sector involvement like in the case of BATF and JnNURM. It would seem that from the perspective of public actors, collaboration has not had positive results because they view it as being driven by too much of a private agenda..

This split view indicates that while collaboration is welcome for financial reasons, it is viewed with distaste when spoken about at the planning level. The City is especially averse to this since many discussions happen between State Government and the private sector, overriding planning proposals for the city. However, since many infrastructure projects require the financial support of the businesses, they are invited to give recommendations when major projects are underway.

### *Theme 3: Collaborative Planning*

*What are the changes seen in Bangalore when the private sector (or public sector) leads urban planning?*

- What is the institutional framework responsible for planning in Bangalore?

This question turned out to be the trickiest one to answer directly. While the ULB BDA drafts the master plan of the city, the BMRDA supersedes the BDA by drafting the structure plan for the entire region around the city. Within the master plan, another agency the BBMP is concerned with infrastructure projects, leaving BDA responsible for land development and planning. To complicate it even further, there are other line agencies responsible for individual projects like water,

roads, public transport, power etc. that work independently of the master plan in many cases.

Oddly, while techparks are developed at the city scale, subsequently demanding infrastructure support at the city scale, it is the State that approves the development of the SEZ's. This is done without consulting the ULB's. The resulting urban form is therefore quite conflicted with several bodies at different tiers of the Government having a finger in the pie, but none of them talking to one another in a transparent or healthy manner. Overall, there are overlapping jurisdictions that impede a holistically planned vision for the city. The governance structure is too fragmented to be firm in its implementation of any vision that is developed.

- How do the private and public sector in Bangalore interact in Bangalore?

The collaboration model in Bangalore lacks some of the key success factors required for a productive business led model, such as a balance between commercial interests and the city's strategic needs, and a clear framework of city authorities. A list of key success factors is depicted in Figure 47. The interviews revealed that there was too much overlap in authority and responsibilities, and way too many agencies involved. The issue was therefore not a lack of collaboration with the private sector, but a lack of clarity in Government roles.

Collaboration also cannot be classified as city led since the city doesn't not invite businesses to contribute to strategic planning, and there is an evident conflict of interest in the short term business interests and long term city development. However, there is a strong Government that implements policies for long term business planning, with a specialized single clearance window system for ease of doing business.

When considering a city led convening model, what Bangalore lacks most evidently is an empowered city mayor, or a strategic decision maker for the city. In addition, although Bangalore has a large IT sector, they do not have a representative voice in strategic Government groups. They are largely involved in lobbying for their specific interests rather than in dialogues to shape the city agenda. However, the two actors work together to invest in certain development projects.

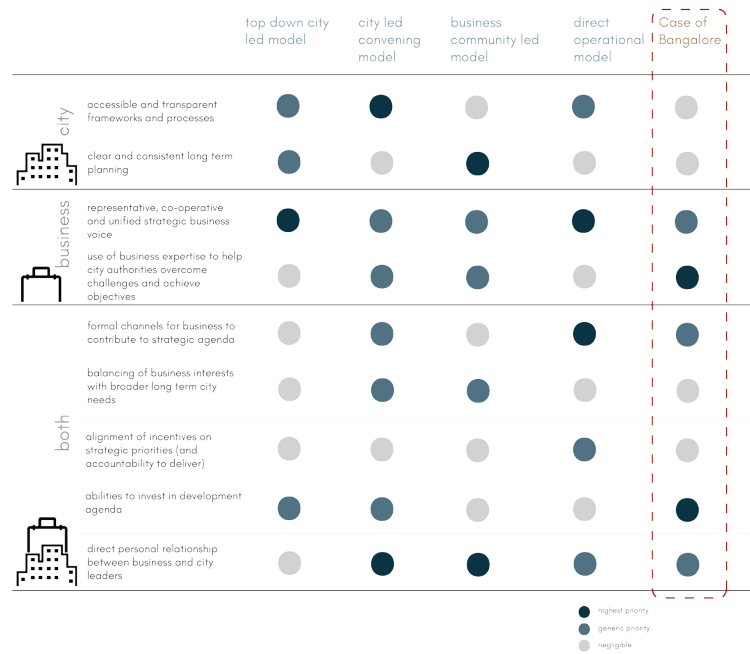


Figure 46: Evaluation of success factors for collaboration in Bangalore (own illustration, adapted from GCBA 2015)

As indicated in Figure 46, the evaluation of Bangalore in terms of the success factors for collaboration indicate that there is a larger propensity for the businesses to direct planning at the city level rather than city Government itself. This is supported by the interview with one institutional expert in Bangalore, who confirmed that the Government is too weak to steer. Several other interviews also confirmed that businesses direct the planning. Both knowledge and capital are invested by the private sector, with the Government recognizing the importance of bringing the businesses on board for major infrastructure development projects.

The data gathered thus far indicates that Bangalore adopts a hybrid model of collaboration as indicated in Figure 47. This evaluation is elaborated below.

At the City level, the authorities collaborate to a minimal extent with the private sector when driving their agendas. There is a system formal interaction that takes place when plans are drafted, where businesses are invited for feedback. However, most development projects at the scale of IT parks are discussed at the State level. Since these large developments have a significant impact on the city, the lack of communication between City Government and the private sector is concerning. Land development, and even the selection of the location itself follows a laissez faire form of governing with a lack of a prospective Master Plan. On the other hand, infrastructure projects see more collaboration even at the City level, often initiated by the private

sector. Financial investment and even execution is taken over by the companies through task forces or public-private partnerships. The City Government supports these initiatives by providing approvals and land acquisitions if required.

At the State level, significantly more interaction takes place between the public and private sector. The collaboration at this level is concerned with approvals for developing Special Economic Zones, which are the pride of the State. Therefore, the driving agent of these collaborations is the private sector, whether they are the developers themselves or larger companies seeking to develop exclusive campuses in the city. The State welcomes development proposals and actively invests in many of them. This interest in collaboration is owed to the State pushing Bangalore as a competitive city at a national level.

At the Central level, the national Government has been pursuing healthy and productive collaborations with the private sector for several decades. This mutual collaborative relationship has resulted in several industrial policies being passed such as the STPI and SEZ schemes described in 4.2.2, Several other policies have also resulted, listed in Appendix I. These policies for growth have been developed and passed by receiving expert opinions from industry representatives. Evidently, this collaboration has been successful since the industrial and economic schemes have raised the investment interest in many cities, particularly Bangalore.

Furthermore, an unexpected finding from the thesis was uncovering the interaction within sectors, not just across it. Interviewees revealed that overlapping jurisdictions and a lack of accountability has resulted in several visions and agendas left incomplete. Especially concerning communication between State and City, the lack of dialogue between planning authorities and approval authorities is a major cause of the sprawling, piece-meal development seen in Bangalore. The City regrets not being consulted on whether infrastructure in the city can support developments that are approved at the State level. Therefore, from the perspective of the City officials, the cause for many of the challenges in the city is not just that the agglomerations have taken over the city, but that they are allowed to do so without a second thought about the repercussions.

From the perspective of the private sector, several interviews that have been conducted by previous researchers (Srinivas, 1998) has served as a source of information. A summary of his field survey with the IT firms in Bangalore is available in Appendix V. The private sector, often

represented by a Government agent or an industry association, is positive with the collaborations that occur at the Central and State level. The lack of red tape and the willingness of the Government to have a dialogue have spurred their interest in locating in Bangalore. At the City level, there is little dialogue with the Government, and many companies have cited the crumbling infrastructure as a cause for concern. Though there is little risk that the companies already in Bangalore will move out, there is concern that new companies will seek locations that are more favorable. This fact needs to be paid attention to by the Government if they wish to retain the competitiveness of Bangalore. Many public-private partnerships were started (4.3 ), and some are still underway, in an effort to repair the city and the relationship between the Government and the businesses. However, with a Government that changes its perception on partnerships with every changing regime, little accomplishment can result.

The three-tiered system of Government in India has therefore resulted in a hybrid model of collaboration when considering the public sector as a whole, vs. the private sector. Each level of Government collaborates in a different manner with the private sector, resulting in varying outcomes. Overall, the findings have indicated that collaborations, when they occur, have only resulted in positive outcomes for both parties involved.

However, when speaking about collaboration between the City and the Businesses, as the Global Cities Business Alliance has researched, Bangalore does not make the mark. While the City Government is interested in collaboration for financial reasons, they do not believe there is much that can be accomplished with more interaction with the private sector. Though Bangalore has managed to come out on top on many fronts including business environment, education, leisure etc., and secured a name for itself as the Silicon Valley of India, the city is struggling with many urban challenges like water scarcity, traffic, congestion, crowding and pollution. Infrastructure is crumbling. For the city to maintain its competitive edge, it is crucial that the City authorities re-evaluate their outlook on collaborating with the private sector.



Building on the framework put forth by GCBA, Figure 47 plots the data received from each interviewee, which was coded into a classification matrix in Table 5. Some outliers exists, resulting in a hybrid model.

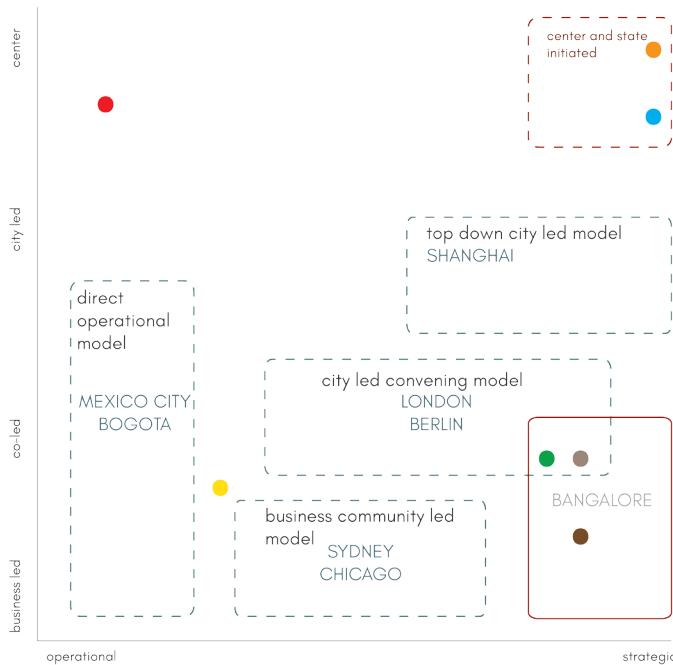


Figure 47: Collaboration in Bangalore as per the GCBA framework (own illustration, adapted from GCBA 2015)

This discrepancy between the public planning of the city at large, and uncoordinated private planning of large-scale developments is unique. With the increasing amount of townships and developments across the city, even basic infrastructure facilities like roads, lighting and drainage is being undertaken by developers and private businesses in order to ensure higher quality living environments. The Government seems to have accepted this as the norm, but since the areas of focus are still largely restricted to business communities and the adjoining residential communities, large-scale improvement across the city is lacking. The approach is piece meal and can be criticized as being elitist.

It is sufficiently evident that concerning planning decisions and execution, the Government structure provides too much room for overlapping functions and responsibilities. Figure 48 illustrates the existing collaboration network, analyzed based on the empirical. They are divided into varying forms of governance, subsequently described.

*Public Private Partnerships*

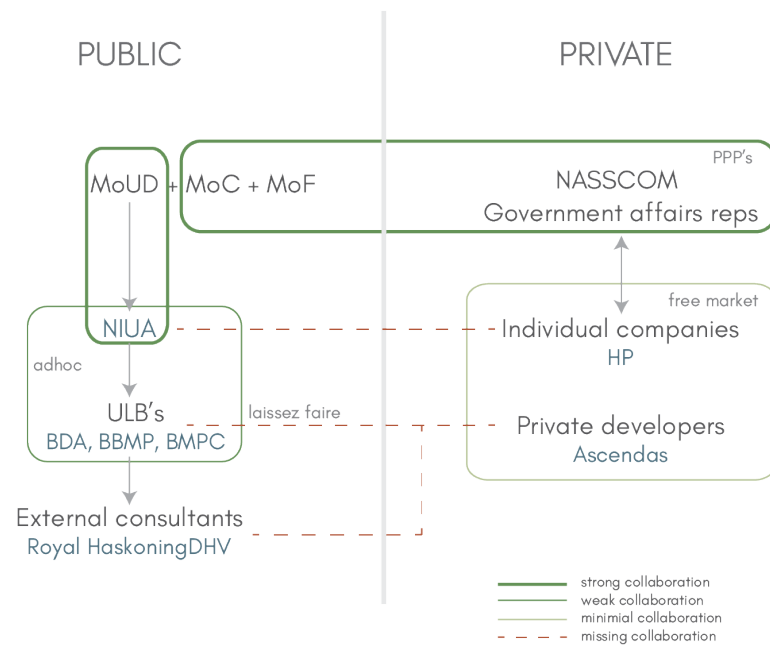


Figure 48: Collaboration network (own illustration from empirical findings)

Starting from the national level, the Ministry of Urban Development, Ministry of Commerce and Ministry of Finance collaborate with the private sector while formulating policies that affect the IT industry.

*Adhoc*

There is a weak interaction between the Center and State within the public sector, owing to the Constitutional separation of functions into Union List, State List and Concurrent List. The two tiers of Government are desired to interact only on those items on the Concurrent List. Land, urban planning and even economic concerns do not fall under this list. However, some policies from the Center (see 4.2.2 ) do prompt a dialogue between Center and State.

*Laissez Faire*

The biggest concern here is that the State Government is not involved in planning decisions with the ULB's at the City Government level, but still approves the SEZ's that influence the urban structure of the city. Collaboration on location decisions for businesses is completely missing between the private sector and ULB's. The Government does

not interfere in these land affairs, only stepping in for approvals but otherwise allowing a laissez faire form of planning.

### *Free market*

Between the private developers of the IT parks in the Special Economic Zones of Bangalore and the individual companies that occupy space within them, the relationship is that of a free market. Those companies that can afford space lease it from the developers. Some companies even collaborate with the developers when looking to set up exclusive company parks. The Government does not interfere at this level.

### 5.2.2 Relevance

For cities such as Bangalore that have adopted urban containment by means of a green belt, a debate of building up or out is prevalent in view of issues such as unaffordability and crowding in urban areas. Planners in Bangalore anticipate continued sprawl, but this pattern has displayed challenges with real estate development into the green belt. Even the green belts of London have been criticized for being the major cause of the lack of affordable housing in the city, by strangling the city just where land is needed the most (Cheshire, 2013a). LSE economist Cheshire has referred to them as a ‘sacred cow’, doing devastating damage to societal fairness, housing affordability, the economic efficiency of our cities, even the environment (Cheshire, 2013b). Further analysis needs to be conducted to understand the implications of each kind of development in order to shape future real estate development.

Comprehensive research is also lacking when tracking changes in the environment of the city with respect to the private and public sector dynamics in the city. The thesis addresses a small portion of this by comparing cities with different collaboration models, in order to draw conclusions in this matter. The target group thus includes policy makers of the city. The thesis provides a better understanding of the forces in play when considering economic geography, but does not make explicit any policy recommendations. The various actors including policy makers, planners, developers and businesses should be equally aware and responsible for the contextual development of the city.

#### Key take-away 5.2

- > Fruitful collaborations across sectors is prominent at the higher level of Government
- > Various strategic and operational drivers influence business location decisions
- > Agglomerations have had negative externalities in Bangalore due to their unplanned nature and private sector agendas
- > Collaboration is viewed distastefully by the City government who believe the private sector only has profit making agendas
- > Private sector still invests in infrastructure because of an inept Government
- > Fragmented and weak City Government leaves room for inefficiencies

## 5.3 Thesis

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### 5.3.1 Testing the hypothesis

The thesis stems from the hypothesis that over a period, a city's urban form morphs to accommodate business needs. As explored in the case of Bangalore, this hypothesis is confirmed through the empirical research conducted in the case of Bangalore. The sprawling pattern of development witnessed in the city has been credited to IT and ITeS real estate developments on the periphery. Private developers solely undertake these developments, and in some cases IT companies like Wipro and Infosys develop campuses directly. Several of the interviewees from both sectors have pointed to the space and infrastructure demands specific to the service sector companies that have encouraged them to seek space outside of the city center. In the 1970's, the establishment of Electronics City by the State at the peripheral green belt of the city spurred the clustered development of similar IT campuses around it. The location therefore allowed the companies to benefit from the economies of agglomeration.

In some cases, accommodation costs have also been highlighted as a centrifugal force, forcing companies that have had city locations to move elsewhere, and triggering development in greenfield sites on the outskirts. Under the Karnataka Town and Planning Act 1961, this peripheral development is further encouraged by the Government when they approve a Change of Land Use for commercial developments. As depicted in the map of Bangalore in Figure 40, the business clusters are all located at a significant distance from the city center, leading to a fractured and polycentric city form.

Though Bangalore is restricted by a green belt, the city has adopted a sprawling pattern due to a permitted change in land use. This urban form is in contrast to cities like London and Sydney described in 2.4. There are lessons to be learnt for both cities here- while London suffers under a housing shortage and extreme unaffordability because of its restricted outward growth; Bangalore suffers under infrastructure woes of a sprawling growth pattern. It is worth mentioning here that the sprawl in Bangalore aligns with a primarily business led collaboration model, whereas the compactness in London is a result of a strong city authority. However, Shanghai and Sydney display a planned sprawl, intended by the Government to ease the strain on one city or town alone.

Overall, the hypothesis that the manner in which a city develops is heavily dependent on the agenda of businesses and their location decisions holds true when studied against the structural changes of Bangalore's urban form.

### 5.3.2 Answering the research question

Having answered the sub questions in 5.2.1 , the main research question- "How can an environment of competitive advantage in Bangalore be maintained while tackling the diseconomies of agglomerating businesses?" is now addressed. The question can be answered by reflecting on the finding that Bangalore not only lacks collaboration between the private sector and the City Government, but a dialogue within between the State and City. Several interviewees from the public sector have cited that the infrastructure problems are a result of lack of communication and alignment of agendas. Therefore, more collaboration between and across sectors is essential to tackle infrastructure woes like crowding, congestion, water scarcity and pollution that has plagued the city. Chapter 1 presents argumentation for enhanced collaboration on matters of real estate development in Bangalore.

Table 6: Thesis (own illustration)

	To maintain competitive advantage	To tackle negative externalities	Both (maintain <i>while</i> tackling)
1	Devolved city government with increased steering capacity	Local Economic Development (LED) *	Prioritise degrading city over pure economic gain
2	Investment in infrastructure and regeneration *	Infrastructure before commercial development *	
3	Investment in research and educational institutions	Compact urban development	
4	Strategies for business retention through economic or industrial policies *	Restricted greenfield conversion	Collaboration between businesses and City

\*Requires cross-sector dialogue

The research question inherently positions itself within a dual perspective of maintaining Bangalore's competitive advantage and tackling the spin-offs of pursuing economic gain. The main research question therefore explores how to manage the friction between these two realities in Bangalore, summarized in Table 6. Collaboration can be a tool to address the aspiration of maintaining Bangalore's competitive edge as well as the need for the City to combat the failures

in infrastructure provisions and sustainable environments. The allocation of power as it stands now, promotes collaboration between the sectors, albeit at the State and Central level. However, since the issues of sky rocketing real estate prices, inadequate water supply, waste collection and traffic congestion are localized phenomenon, it is imperative that it is the City who is designated the power to take charge. This decentralization of power, especially in regards to land development and approvals, is a first step in triggering communication about prospective planning between the private sector and the City. This conclusion is arrived at by addressing two parts of the research question, explained below.

*How can competitive advantage be maintained?*

Bangalore has already established itself as a competitive city, especially in providing a business environment for IT and related sectors. It is home to several technical universities that have fed the market with trained labor. Coupled with reasonable accommodation costs when compared to other metropolitan cities, Bangalore’s competitive edge gained momentum with the establishment of numerous Special Economic Zones. Furthermore, commercial development is put on a fast track with the Change in Land Use facilitated under the Karnataka Town and Planning Act 1961. Table 7 summarises how Bangalore has created a competitive edge in the IT industry.

Table 7: Competitive advantage of Bangalore

Tool	Investment in education	Industrial policy	Land policy
Output	Technical universities	Special Economic Zones	Commercial real estate growth
Benefit to businesses	Skilled labor	Tax concessions	Agglomeration clusters

Literature and data from the interviews (4.2 and 5.2 ) has indicated that the Central and State Governments have taken an active role in promoting Bangalore’s competitive edge. Evidently, the City government does not carry much power. However, as indicated in the research done on the cities in 2.4 those cities that lead in the competitive city race have a decentralized approach to governance, with increased power in the hands of the City Government and local authorities. Local governments should have more control over

decisions regarding land development, siting of major facilities, and land-use regulation (Dowall & Clarke, 1996)

For example, Sydney reformed its government structure to consolidate the city authorities into one governing body. In the case of developing cities like Shanghai, to stay ahead of neighboring competing cities the Government invested in urban regeneration of the central city to increase the standard of living for its residents. For Bogota, the government facilitated investment in the city by creating appropriate channels and focusing on specific arenas that needed improvement. Bangalore stands much to learn from global competitive cities that have devised new strategies to help compete on a global and local stage. Therefore, there is no single recipe for economic success or maintaining competitive advantage, since each city's approach is dependent on its capacity and culture.

The series of reforms from the Government, explained in 4.2.2, can be traced back to the 70's. They include export, FDI, infrastructure and operational reforms- all successfully implemented with the intention of creating a globally competitive city. These tax incentives have been renewed in an effort to attract foreign and domestic investment (Ernst and Young, 2016). Appendix VI indicates the benefits that companies attain from locating in SEZ's. However, it is questionable whether this aggressive approach of gaining a competitive edge is still required now that Bangalore is the IT capital in the country. The city is grappling with an unsustainable urban sprawl, largely attributed to commercial real estate growth at the periphery. The Government has approached competitiveness with the single intention of economic gain, with scant attention paid to city development. This brings us to the next part of the research question:

*How can the negative externalities of agglomerations be tackled?*

The research addresses the nature of competitive advantage in the context of such a degrading city. The second question implies that despite the intention of gaining competitive city advantage, the Government has overlooked basic provisions that support business growth. The flip side of a large metropolis like Bangalore lies in the fact that the city struggles with basic amenities like adequate transport infrastructure and water provision, as explained in 4.1.2.

The aggressive form of creating a competitive advantage has surely benefitted the city from an economic standpoint, but has had severe side-effects. This brings us to revisit what encompasses a competitive city. Literature has indicated that for a city to truly be competitive, it

needs to provide an increased standard of living for everyone working and living there. In Bangalore, environmental degradation, uncontrolled sprawls, crowding, congestion and dismal service delivery, while on one hand threaten the livability of cities, on the other are usually downplayed by the Government as inevitable consequences of rapid economic growth. The current inability to provide infrastructure begs the control of urban sprawl by restricting greenfield developments at its current pace. Corporations have jumped the gun on how they have chosen to develop, expecting the Government to follow with appropriate infrastructure improvements. However, the Government has been slow on the uptake.

To tackle these externalities, a strategic choice for Local Economic Development (LED) offers local government, private and not-for-profit sectors, and local communities an opportunity to work together to improve the local economy. LED focuses on enhancing competitiveness, increasing sustainable growth and ensuring that growth is inclusive. International Finance Institutions encourage this form of development by which public, business and nongovernmental sector partners work collectively to create better conditions for economic growth and employment generation (World Bank, 2010). Since the Government is dependent on these IFI's for funding development projects, it is in their interest to build relationships with several stakeholders to address infrastructure concerns.

With a stronger local government, there is an opportunity for ULB's to plan and develop infrastructure before commercial developments receive approvals from the State. This requires a proactive government approach, unlike the present system, which leaves the City unprepared for growth, and struggling to follow the pace of real estate development. Governments play an important role in promoting such efficient patterns of land development by planning for and permitting higher density development and providing it with the infrastructure it needs (Dowall & Clarke, 1996). Setting the structure for future urban development by building key infrastructure is the most effective method for promoting sound urban development.

#### Key take-away 5.3

- > Hypothesis is that Bangalore's urban form is morphed by business location decisions is tested true
- > Maintaining competitive advantage in Bangalore requires a devolved Government and strong steering from the City
- > Investments in infrastructure need to lead commercial real estate development, not follow it
- > Local Economic Development and collaboration across sectors can help tackle the negative externalities in Bangalore



## 5.4 Summary

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The research data has indicated that Bangalore exhibits a hybrid collaborative model, with different approaches to policy development and city planning. The assumption herein is that the type of collaboration that currently exists influences the way the city has developed, resulting in private sector benefits over holistic city concerns. This pattern has ultimately led to uncontrolled growth and an urban sprawl. As stated by Gilles Duranton, chair of the real estate department of The Wharton School, “Governments should be business friendly, not friends of business.”

Planning through collaboration and Local Economic Development approaches can provide a holistic view of how the urban structure of a city affects not just the city’s economy, but also the quality of life it offers. From the perspective of the City officials, the cause for many of the challenges in the city is not just that the agglomerations have taken over the city, but that they are allowed to do so without a second thought about repercussions. If given more development control, the City authorities can ensure that economic growth does not cost the city its livability.

## CHAPTER 6. CONCLUSION

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Bangalore has attracted investment and companies from across the world since the 80's. The inherent geographical characteristics of Bangalore like the temperate climate have been mentioned as one of the foremost reasons Bangalore became a preferred location choice for businesses. Nicknamed the Silicon Valley of India, it displays a strong presence of Porter's determinants of competitive advantage like the factor conditions of the presence of skilled labor. This is credited to numerous technical universities that churn out trained professionals. Other firms also become part of this labor pool, and companies frequently recruit their employees from them. Cheap labor in addition to the globally recognized software products, provides a solid base in the demand conditions to maintain the city's competitive advantage in Information Technology. Finally, the network of service sector industries in Bangalore provides mutual support to the companies, providing solid forward and backward linkages. This has resulted in the city being dominated by several agglomerations of software related industries.

Through several policy instruments and initiatives like the Software Technology Parks of India (STPI) and the Special Economic Zones (SEZ's), the Central Government has facilitated these agglomerations, encouraging growth and investment in software and related industries. The tax benefits, real estate subsidies and duty free imports available to those companies in the SEZ's encourage companies to seek accommodation in these techparks. With the numerous companies locating in these SEZ's, they provide a conducive environment that delivers agglomeration economies such as pure external economies like knowledge spillovers, thick labor markets and market size effects.

Since Bangalore is the only city receiving such interest from the State Government of Karnataka, there is a lack of competition within cities of the same state. Infrastructure woes threaten Bangalore's position as a competitive city, and several companies have voiced concern of the capacity of the city to sustain growth. To improve competitive advantage, the Government has focused on promoting industrial growth, and successfully accomplished its task of bringing certain cities to the forefront for foreign investors. However, now that the image has been established and the city houses the world's leading IT companies, the momentum required to keep Bangalore ahead needs to focus on provisions other than just policy and tax reforms. Companies themselves look to cities to support them on various aspects, and

research has suggested that the failure of the City in providing the right environment is a rising cause of concern. If left unaddressed, Bangalore will be faced with a new problem of companies pulling out from investing further.

Should Bangalore lose its status as a premiere city for IT investment, chances are that the companies will move to other states altogether. Bangalore needs to take stock of its capital resources including not just the intellectual and social capital, but the technical, democratic and moreover environmental capital. Therefore, in the interest of the State, it is necessary not just to tackle the negative externalities that have resulted over years of growth, but also invest in other cities that can ease the pressure on Bangalore. Metropolitan cities like Hyderabad, Chennai and Pune are already receiving much interest from international companies, with several of them creating exclusive campuses and building world-class infrastructure in expectation of investment. With the new Smart Cities initiative of the Central Government, many other cities are also receiving attention, allowing them to build cities of the future. Bangalore has not been selected as one of these cities, implying that the initiative for improvement needs to be localized.

However, due to the fractured institutional framework in Bangalore and limited City power, the City is unable to tackle its issues effectively. The responsibilities of planning authority BDA overlap with BBMP, BMRDA and several other bodies, making jurisdiction a nightmare, and execution a daunting task. While the Central Government controls transportation infrastructure, and income and corporate taxation, much about industrial development trajectories are determined at the State, which holds the power of approvals. City authorities need to be empowered to direct and adapt planning as the city takes shape. Urban Local bodies (ULB's) need to be streamlined for this to occur. Subsequently, by granting them sufficient power to plan the city, they may yet be able to restrict the infrastructure problems in the city from spreading. With more power, the City will be able to firmly direct city planning, without being overridden by State level politics or individual private sector interests.

For the City, dialogues must be initiated with the private sector on real estate development matters. This is especially so for Bangalore since it dominated by the IT sector, economically and in terms of physical representation in the city. Whether financial or logistical, business input is crucial when identifying potential employment centers. This will allow the city to plan them in accordance with private sector

preferences, instead of following up on their location decisions with weak infrastructure. This kind of collaboration is still weak in Bangalore. The City Government looks toward the private sector more for capital investment than strategic planning. Moreover, the city is dependent on the IFI's for funding the development projects. These IFI's recognize the importance of collaboration with the private sector, and have been pushing this agenda as a precondition to financial assistance that is provided. It is crucial for the City to re-evaluate its stance on interactions with the business community by taking a stronger stance on steering development based on input from the IT sector.

For the businesses, the acceptance of social obligation and Corporate Social Responsibility (CSR), by firms like Infosys have affected several changes across the city before. Social responsibility begins where the law ends (Davis, 1973), and the large private sector community in Bangalore have an opportunity to fill the void in a city which is in dire need of revitalization. Such an approach favors the private companies, wherein by creating a better community, they receive a better community to conduct business in. However, CSR should not be viewed as a panacea that can solve all the problems, but it certainly is a step in the direction for an improved and sustainable environment to conduct business in. In order to develop long-term transformation of the real estate development process, CSR must be vigorous in its prospective planning with the City.

A city led convening model such as that in London facilitates a give and take relationship between the city authorities and the businesses. It is evident that it is crucial for the City to provide an environment that generates discussions with the private sector. By considering their inputs, a proactive outlook can be developed rather than a reactionary one. The call now is to move from an approach of aggressive competitiveness to future proofing the city. For Bangalore to realize economic growth and maintain its competitive advantage, it will need to address the risks of its degrading physical environment. Collaborations via approaches such as Local Economic Development (LED) offer a solution is to build up the economic capacity of a local area while still to improving the quality of life for all. The way ahead is a path where each stakeholder in the city looks out for their personal interests, without sacrificing the interests of the city as a whole.

Strategies for competitiveness need to incorporate strategies for building a future-proof city. Bangalore is still a budding city, witnessing significant growth only from 1990's. Many of the urban

realities of the city that have been criticized in this thesis have also been faced by several other cities such as Shanghai and Bogota across the world in the past. However, since some these cities have been able to recognize and correct the issues by decentralizing planning and policy authority, as well as collaborating with the private sector, there is hope yet for Bangalore to compete globally not just in the provision of IT services, but also in the provision of a healthy city to live and do business in.

## Further research

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In the wake of rapid and uncontrolled urbanization, there is much scope for research on several topics that were touched upon in this thesis. The nature of real estate development in relation to land prices in Bangalore, is something that can quantitatively support the theory that urban sprawl can push real estate prices up in the city. In addition to infrastructure concerns, this causality can support the argument in favor of tending towards compact urban growth.

Furthermore, it is evident that infrastructure is a rising cause for concern in the city. While the private sector has tried to work with the Government to improve conditions in the city, implementation has been too slow. This realization has caused many domestic businesses to invest in exclusive mixed-use townships instead- where public amenities and infrastructure are all privatized. These developments offer an increased standard of living for companies and its employees. It is now wonder that townships have been increasing in popularity in several Tier-II cities across India. There is much to be investigated in this trend, and an underlying question of whether the way ahead is to hand over development control to privates.

There have been some attempts at creating formal partnerships between the public and privates sector in Bangalore. However, they have not been well documented or researched. A change in regime has dissolved many of these public-private-partnerships, although many of them have made significant improvements in the city. Researching the effectiveness of these partnerships can enable an understanding of what has worked, and correct for mistakes that were already made.

Due to the limited scope and time available, the thesis lacks corroborative data from the State Government of Karnataka. Since the State plays a crucial role in land developments and industrial policies, interactions with these officials occur more frequently than with the City Government. Further research can investigating the role of the State in the topics mentioned in the thesis, as more data sources can only substantiate findings.

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# Appendix

## I. Summary of policy changes

<i>Period</i>	<i>Policies</i>
1947-60 <i>Public Sector Policies and Creation of Large Firms</i>	<ul style="list-style-type: none"> <li>State monopoly in several defense and infrastructure industries and most of them located in Bangalore</li> <li>Setting up of large public enterprises like Hindustan Machine Tools (HMT), Bharat Electronics Limited (BHEL) and Indian Telephone Industries (ITI)</li> <li>Licenses for large private firms like Motor Industries Company better known as MICO (the automotive components manufacturer, a subsidiary of Robert Bosch GmbH of Germany) and the machine tool manufacturer WIDIA</li> </ul>
Early 1970s <i>Export Focus Training and Procurement Policies</i>	<ul style="list-style-type: none"> <li>The <b>Software Export Scheme</b> included imports of hardware for exporting firms with duty concessions</li> <li>Emphasis on computer and software education and training. Institutions that focused on training were allowed to import hardware at much lower import duties</li> <li>Department of Electronics (DOE) began to encourage public sector projects that dealt with software development. Public procurement of software gave priority to Indian companies.</li> </ul>
Mid 1970s	<ul style="list-style-type: none"> <li>Restrictions on foreign ownership (FERA)</li> </ul>
1976-77 <i>Export-Import Liberalization</i>	<ul style="list-style-type: none"> <li>Hardware import duties reduced from over 100 per cent to 40 per cent</li> <li>Faster clearance of software export applications</li> <li>Software exporters could take advantage of export incentives including locating in EPZs</li> <li>Non-resident Indians allowed to import hardware for the purposes of software export with a 100 per cent export obligation.</li> </ul>
Early 1980s <i>Foreign Investment Export-Import Liberalization</i>	<ul style="list-style-type: none"> <li>DoE more supportive of the domestic software industry, encouraged software exports and export-oriented foreign investment</li> <li>Import duties on hardware were raised</li> <li>Firms allowed to use the hardware for the development of domestic software as well as for exports</li> <li>Software exporters could also import "loaned" computers</li> </ul>
1984 <i>New Computer and Software Policy</i>	<ul style="list-style-type: none"> <li>Import procedures for hardware and software simplified</li> <li>Import duties for hardware and software reduced from 135 per cent to 60 per cent for hardware and 100 per cent to 60 per cent for software</li> <li>Software recognized as an industry and licensing procedures simplified</li> <li>Improved access to foreign exchange for software firms</li> <li>Income tax exemption on net export earnings reduced from 100 per cent to 50 per cent</li> </ul>
1985	<ul style="list-style-type: none"> <li>DoE of Karnataka formed an Electronics Park - KEONICS- that housed the Software Technology Park</li> </ul>
1986 <i>Computer Software Export, Software Development and Training Policy</i>	<ul style="list-style-type: none"> <li>Imports of hardware and software further deregulated; anyone could import software at 60 per cent duty</li> <li>100 per cent export oriented software production units permitted to import hardware duty free</li> <li>Indian firms allowed to sell foreign software, i.e. they could become distributors</li> <li>Export obligations for hardware importers increased by 50 per cent and the time in which to meet the obligations reduced to 4 years</li> </ul>
1989 <i>Tax on Travel</i>	<ul style="list-style-type: none"> <li>Imposition of a 15 per cent tax on foreign exchange expenditure on travel</li> </ul>

1989 <i>Telecom Infrastructure</i>	<ul style="list-style-type: none"> <li>• VSNL commissioned a direct 64-kbps satellite link to the US - a new gateway switching system, which operated through Intelsat and was directly linked to AT&amp;T's earth station at Coram on the US East Coast</li> </ul>
1988-1991 <i>Software Technology Parks of India (STPI) Scheme</i>	<ul style="list-style-type: none"> <li>• Software Technology Parks of India Scheme - Creation of software technology parks for the production of software for export <ul style="list-style-type: none"> <li>○ Government provided office space and computer equipment, access to high-speed satellite links and an uninterrupted supply of electricity.</li> <li>○ DoE installed appropriate telecommunications equipment to provide easy access to the clients of software firms that expedited delivery of software exports</li> <li>○ 100 percent export-oriented firms a tax-free status for five years within the first eight years of operation</li> <li>○ Single window clearance for projects (for the smaller projects, i.e. less than Rs. 30 million only STP clearance required)</li> <li>○ 100 per cent foreign equity permitted, and no restrictions on location (1)</li> <li>○ Provision of video-conferencing services between Bangalore and the rest of the world</li> </ul> </li> </ul>
1991 <i>Forex policies and Trade Liberalization</i>	<ul style="list-style-type: none"> <li>• Devaluation and partial convertibility of the Rupee</li> <li>• Abolition of tax on foreign exchange for travel</li> <li>• Reduction in telecommunications charges for satellite links</li> <li>• Duty-free and obligation-free imports of telecommunications equipment in the STPs</li> </ul>
1992 <i>Telecom</i>	<ul style="list-style-type: none"> <li>• Exclusive satellite international gateway for export industry is set up.</li> </ul>
1992 <i>Tax Policies</i>	<ul style="list-style-type: none"> <li>• Software exports brought under the Income Tax Act exempting exporters from income tax (2)</li> <li>• Income tax exemption offered to EPZs and 100 per cent export oriented units extended to software exports from companies taking part in these schemes which were established in or after 1993</li> </ul>
1994-95 <i>Trade Liberalized Further</i>	<ul style="list-style-type: none"> <li>• Reduction of import duties on software to 20 per cent for applications software and 65 per cent for systems software and in 1995 to 10 per cent for both</li> <li>• Liberalization of hardware import duties and loans for importing hardware given certain export obligations (export obligations could be met from earnings from on-site services)</li> </ul>
1997 <i>State IT Policy</i>	<ul style="list-style-type: none"> <li>• Govt. of Karnataka announces IT Policy and Karnataka becomes the first state in India to do so</li> </ul>
1999 -2001 <i>FDI Policy</i>	<ul style="list-style-type: none"> <li>• DoE allowed 100% FDI in the IT industry</li> <li>• Government favors foreign investment in infrastructure and high technology over consumer products</li> </ul>
2001-2005 <i>Deregulation</i>	<ul style="list-style-type: none"> <li>• Deregulation continues, albeit at a slow pace</li> </ul>

1. STPs are connected by an integrated network, SoftNET, whereby subscribers can lease a point to point digital 64 kbps channel, and have access to the Internet with their own TCP/IP number, which would give them e-mail, remote log in, and file-transfer services as well as access to the World Wide Web.
2. Confirmation of this status occurred on an annual basis until 1995 when confirmation became open-ended. Because software exports were brought under the same chapter of the tax code as merchandise exports, some of the benefits were eroded due to the different characteristics between merchandise and software exports. (Current status?)

## II. Interviewee Details

Representative company	Acronym	Interviewee name	Description
Ascendas-Singbridge	-	anonymised	Representative of private developer of IT parks
Hewlett-Packard	HP	anonymised	Representative of leading multinational IT company
National Institute of Urban Affairs	NIUA	anonymised	Representative of Central Government autonomous planning body
Royal HaskoningDHV	RHDHV	Nikhil Deshpande	External consultant for Bangalore master plan 2031
Bangalore Development Authority	BDA	Kumar BN	Additional Director of Town Planning at BDA
Bangalore Metropolitan Development Authority	BMRDA	Dr. M.N. Chandrasekhar	Ex- planner at BMRDA
Institutional expert	-	Dr. Anjali K Mohan	Independent researcher and consultant on governance and planning

### III. Interview protocol

#### *Opening*

Thank you very much for taking the time to participate in this research. I am pursuing my thesis in real estate management at TU Delft in the Netherlands and conducting a research thesis with the help of mentors from the university. My research topic is an enquiry into the collaboration and participation of the private sector in the planning of Bangalore.

The questions of this interview will help in understanding what a corporation such as you seeks in terms of a business environment, and how they strive to achieve it in a growing city. Some of my questions will hence aim to understand the company's interactions with the Government.

In our preceding email correspondence, I had sent you an outline of the topics that will be covered during the interview. Do you mind if I record our discussion? It would really help speed things up during our interview, and especially later if I need to revisit it while writing my report. I assure you that the research is purely academic, so if you wish to remain anonymous that is not a problem.

Before I begin with the questions, is there anything you'd like to know?

Can I start with the interview now?

#### *Closing*

I think that covers just about everything I wanted to ask. Is there anything else you want to add to the things that were discussed?

Thank you for sparing your time for helping out with my research. The information you have given me has been very insightful. Would you be ok if I reached out to you if I have some follow up questions that might crop up during the course of the research in the next few weeks?

I would be very happy to share my findings and research with the company, if you'd like. Please let me know if that is something that would interest you.

Thank you again for your help. It has been great speaking with you.



Ascendas- Singbridge

OUTLINE	Ascendas, Bangalore	Private company, public sector initiative
QUESTION	QUESTION	FOLLOW UP QUESTION
<i>Shall we start with telling me a little about Ascenda? We can begin with the company's first foray in India.</i>		
Brief of company's history in India	Let's start with the inception of ITPB and the subsequent ITPb park. How did it all begin? So there were three major stakeholders- Ascendas, Tatas and the government itself. How did each party contribute to the development of the park?	Ascenda is a Singapore based firm, how did you come to be involved in projects How was the consortium set up? Was the investment split across these 3 major stakeholders? Can you take me through the process thereafter?
<i>So as I understand, ITPB was one of the first few ventures of Ascenda, I'd like to know more about how the project began.</i>		
Navigating key requirements of businesses prior to setting up park.	The tech park is a fairly large undertaking, and was one of a kind when it was set up. Was there a consultation process while setting up the park?	Who was consulted? What were the key agenda points from the companies that were consulted? Were there some guarantees in terms of which companies would occupy the space at the park? Did these companies also invest financially in the development of the park?
	It seems like Ascenda's had the job of bridging the gap between the private companies and government requirements. What government body did you interact with the most?	Being a government initiative, I'm sure the government had some requirements that needed to be met as well. What were their key objectives? How were these two parties brought together? Were there any particular challenges while trying to satisfy the two stakeholders?
	What was the experience like working with the government?	Can you highlight some of the major hurdles faced in the process?
<i>Let's move on to the fact that the government played a massive role in setting up an environment in which Ascenda could even begin the park development. Several policies and</i>		
Process and interaction with government- on ITPB initiative	It's quite particular that the government was involved in the process of the park's development. Can you tell me a little about their contribution?	How involved is the state government in the activities of the park today? What was your contribution to the consortium? The ITPB was set up as an initiative post the STPI scheme of the central government. Was Ascendas involved in some kind of dialogue with the government?
	What was the collaboration like with the government?	During the inception, was interaction restricted to with the central government, or was the state government equally involved? How involved is the state government in the activities of the park?
<i>A lot has changed since the park was first started. I will now ask you some questions about the evolution of it since the 80's and the collaboration that it entailed through the years.</i>		
Interaction with city planners- regarding development of the park ( masterplan etc.)	The master plan of Bangalore is drafted by the city government- BDA and BBMP. What kind of interaction did you have with these government agencies when the plan was drafted?	Was Whitefield selected in collaboration with these government agencies and their plan for the city? Or was it a more organic process after the plan was drafted? Was there a mediator involved in your interactions with the government, or was it first hand dialogues? Any consultant that was appointed from the municipality?
	Can you tell me a little more about how ITPB seeks to align itself with the master plan of the city?	The government has a small share in the park, but I wonder if they take an active role in the management, or provide any suggestions or directives. Can you tell me a little about how they are involved now that the park is functioning?
Role of Ascenda in the park, especially now as majority owner. (Any difference from role before when Tata was involved?)	Ascendas has since bought over the share of Tatas and is now majority owner. What prompted this move?	Has the role of Ascendas changed since becoming majority owner? How is this reflected in the operations of Ascendas at ITPB? With a majority ownership, what are your responsibilities in terms of managing and developing the park?
Interaction with businesses today	So, how many companies are housed in ITPB?	Would you say that they are actively involved? How are they involved in the park? Are there a lot of meetings that are held with the representatives from these companies? What kind of feedback do you receive from them?
<i>So, ITPB is located in Whitefield. I'm curious how this location was narrowed down on. I'll begin by asking you some questions about this decision.</i>		
Reason for Whitefield location	Were there any other locations considered when the park was being set up? Can you tell me about how the final decision was reached?	Was the final decision based on some kind of consultation with the government? Did preferences of the private businesses also contribute to the final choice of Whitefield?
	At the time when ITPB was set up, Whitefield was pretty much barren land. How did Whitefield get picked up as a location choice?	What about Whitefield do you think provided the right environment for setting up the first tech park here? Is there a particular reason the city centre or something closer to it was not considered as a possible location?
	How did you try to ensure success of the project?	Was the intention to merge the masterplan of Bangalore with the plan for these techparks, or were they undertaken independently? Did you find that there were some discrepancies when conducting dialogues with the state government vs the city's local bodies?
<i>I'd love to hear more about your thoughts on the project and business location decisions in the city. This last part will conclude the interview, your opinion and predictions about the future</i>		
Opinion on the effect of ITPB in promoting other parks	What do you think the effect of ITPB has been in the area?	How do you think it has affected the growth of other tech parks in the area?
Company involvement	How does Ascendas strive to improve this technology park?	How has the response from the companies that occupy space been? Are there any complaints? Is the company currently involved in any talks or projects regarding city level infrastructure improvement?
Future insight of company, growth in the city	Are there more such tech parks that are being set up in the city? What trends do you see in terms of business locations in Bangalore?	Can you tell me more about these initiatives? Are they also collaborations with the government? Or with the companies? Has this changed much from say a decade ago? What are the most prominent changes you see in the preferences of their locations?

*Hewlett Packard*

	Hewlett-Packard, Bangalore	Private company
<b>OUTLINE</b>	<b>QUESTION</b>	<b>FOLLOW UP QUESTION</b>
	<i>Why don't we begin by you telling me a little about HP's history in India?</i>	
current accommodation- reason for moving, pull factors, advantages of locating here	HP is one of the oldest tech companies to set up in Bangalore. Can you tell me a little about how it started here? Where were the first offices? How many offices are there across Bangalore today?	What kind of collaboration or agreements with the government were established when HP moved to India? How many offices are there across Bangalore today? Where are they? Which one of these offices are owned, if at all?
	<i>HP has moved a lot over the recent months. Can you briefly take me through the journey?</i>	
evolution of their locations in the city	What can you tell me about the real estate consolidation that HP has been undertaking over the past few years?	What is the reason that these office locations in particular have been chosen for expansion? How long have operations been consolidated into the Whitefield office?
push factors	The HP office used to be located near old airport road. Is there a reason that the company shut down the operations there and consolidated to Whitefield?	What's the reason a city center location was not selected?
experience in Whitefield	How long has HP held an office in Whitefield?	Are there particular advantages to the company of being in these kind of techparks? Overall, what can you tell me about how HP views being in these clustered developments outside of the hustle of the city?
influence of government	Can you think of a time when HP based their decision on a recommendation or directive from the government?	How about any government incentives that prompted a change in where business was conducted?
	<i>My next set of questions will be based on how these decisions have evolved over time.</i>	
location preferences	What preferences for business locations do you have as an occupier? Okay, after all the shuffling around now, where are HP's head office in Bangalore?	Were any of these put forward to the government at the time of locating? The techpark is located quite close to ITPB and the companies occupying space there receive incentives. Can you say something about what kind of incentives HP receives?
private sector involvement	The city has been growing quite exponentially, and the offices of HP are also more widespread over the years. A lot of companies now choose to be in techparks outside of the main city center. What about this particular location makes it such a popular choice?	Do you think this trend will continue? Despite having to tackle the commute and poor infrastructure in some of these places, why do companies still want to be here?
	Do different companies get together to discuss common challenges or concerns for the area?	Are these taken forward to the municipality? Have they been receptive to suggestions from the industry? Do you think the city or government facilitates discussions about planning?
motive	Have you collaborated with the government on say infrastructure issues in the current area, or perhaps plans for future developments in Bangalore? Was the company's collaboration with the government based on financial investment or more advisory?	Can you tell me about a time when the government has implemented any suggestions? Are some of them in effect now? Would you say the investments for improvement come primarily from the private sector?
	<i>Infrastructure in Bangalore is a common complaint amongst residents and companies alike. My next set of questions will try to understand how HP is involved in the area via interactions</i>	
Government interaction	How does HP try to improve the environment in the area that they occupy, say for example in Whitefield?	What else can you tell me about your interactions with the government? How frequently are dialogues with the government encouraged? Which tier of the government do most dialogues happen with? What are the recurring topics or concerns in your discussion with them? In your knowledge, has the government adjusted their plans based on feedback from either you or other companies?
experiences with interacting with industry associations like STPIB or NASSCOM etc.	So NASSCOM is the industry association that I see HP has a representative on. How involved is the company with NASSCOM? How receptive has the government been to the requests and demands from the private companies?	Can you tell me a little more about the agenda that is being driven with NASSCOM? What kind of policies are top priority for you as a company? Where do you think the biggest challenge in government interaction lies?
Opinion on collaboration	How would you like to see the city being planned in an ideal situation?	Bangalore is predominately IT and software. If these companies were to come together to improve conditions in the city, a lot of difference could be made. What can you tell me about what has been achieved so far? Do you think the private companies are sufficiently consulted when decisions are being made for the larger scale? Do you think this kind of interaction benefits the company? What would you like to see done differently in terms of the city's plan?



Bangalore Metropolitan Region Development Authority

OUTLINE	QUESTION	FOLLOW UP QUESTION
	Bangalore Metropolitan Region Development Authority (BMRDA), Bangalore	Local governing body representative
	<i>Shall we start with telling me a little about your role in the city government?</i>	
Role of BBMP/ BDA/ BMPC	Bangalore has two government bodies that are involved in land and infrastructure developments. Can you tell me more about the responsibilities? The BBMP is also involved in land related decisions for the city. How are they involved in the planning? Can you tell me something about the involvement of the new committee set up- the Bangalore Metropolitan Planning Committee?	What is the role of BDA in the planning of Bangalore? Who takes the lead in the prospective planning for the city? Can you clarify the division of responsibilities between the BDA, BBMP and MPC?
	<i>A masterplan for such a booming city can be a challenging task. I will now ask you some questions about the process of delivering this masterplan.</i>	
Planning process	Can you take me through the steps involved when a new masterplan is being drafted? The vision formulation seems like a crucial stage of the process. How is this stage conducted?	What other parties are involved at this stage of the plan? Is the state and central government also consulted for inputs at this time? Are the major businesses in the city also consulted for their preferences? What kind of difficulties do you face at this stage?
	<i>I would like to go back in time a little to understand how Bangalore has developed in the last two decades.</i>	
Government initiative	Bangalore has developed rapidly because of the IT boom. Many policies and initiatives were proposed to encourage business growth. Can you tell me something about this?	Software Technology Parks of India is one such initiative from the central government. Was this actively reflected in the masterplan 2015? What more can you tell me about the central government's influence in the city planning?
Government tiers	How is the state government involved in the development plan for its capital city Bangalore?	Are there some policies from the higher government (either state or center) now that influence the master plan for Bangalore? What is the interactions between the city BDA and the state government in matters of planning and land? For the approval of the plan, which tier of government is approached?
Financing	What can you tell me about the financing of projects?	Who contributes the majority of the money? Are some major private companies also involved in financing for city improvement and development?
	<i>Let's talk some more about the large private sector in the city.</i>	
Interaction with private sector	What kind of interactions did you have with the companies that contribute so greatly to the city?	What kind of discussions do you have with the private sector stakeholders in the city? Were these interactions formal in nature? Can you give me an example of some of their preferences that have been accommodated for in the city plan?
	Who is the first to initiate the discussions? What kind of inputs have you received from them for the masterplan of the city?	What are the major topics of discussion?- location preferences, infrastructure development, project funding? How frequently are these meetings held?
Third party involvement	Do you interact with the companies directly or via a mediator?	
	<i>SEZ's</i>	
	How were the current locations of SEZ arrived at?	Was the final decision based on inputs from the state government, since this was an initiative from them? What about these locations do you think provided the right environment for setting up the first tech park here? Is there a particular reason the city centre or something closer to it was not considered as a possible location?
	How does the masterplan reflect these technology parks?	Did preferences of the private businesses also contribute to the final choice of Whitefield?
New clusters in the plan	These areas are already saturated with limited infrastructure, but businesses are growing. Does the new masterplan have more areas like these selected for commercial development	Was the intention to merge the masterplan of bangalore with the plan for these techparks, or were they undertaken independently?
	<i>Opinion</i>	
Future of the city	Bangalore is growing rapidly. Do you think it would be helpful to collaborate more with the private sector to ensure a better city environment? Would you say the private sector is open to collaborating and investing in the development of the city?	What kind of input do you receive from them? Do they also contribute financially to these projects?
	We are already struggling with lack of infrastructure in the city. How do you work with the private companies to improve the situation?	Are there any projects you can tell me about that you are collaborating on now?

## IV. Interview summary

### *Ascendas*

The key points from personal communication with a representative from Ascendas-Singbridge are listed below:

International Tech Park Bangalore (ITPB), developed and managed by Ascendas-Singbridge, is India's first hi-tech park designed to provide a complete 'work & play' environment for IT and technology-related businesses

- The IT Park was conceptualized in 1992 as a Government-to-Government bilateral initiative by erstwhile - Prime Ministers of Singapore and India
- ITPB is a joint venture with Karnataka Industrial Areas Development Board (KIADB) of Government of Karnataka, It is the icon of India's IT success story, and continues its contribution to the development of Whitefield as a major IT hub in India's Silicon Valley.
- within the Export Promotion Industrial Park (EPIP) Whitefield, ITPB campus falls under the Industrial (Hi Tech) zone as per the CDP Master Plan
- ITPB has set up a benchmark of excellence for IT Park business in India. The Park triggered wave of IT Park developments in India and set trends for other Parks with its unique offering of quality business space, reliable business solutions and an international business lifestyle.

### *Hewlett-Packard*

The key points from a semi-structured interview with a representative from HP are listed below:

- Most multinationals setting up shop lacks a comprehensive location strategy for the country, and even within a city. HP is one of them who have recently been trying to juggle their portfolio to streamline it. Within Bangalore, they have 14 different lease locations spread across the city. Post the recession, the American based company is under pressure to reduce costs, which translated to transferring a huge workforce to the country. The urgency of the move left them lacking in a holistic location strategy.
- With a long term outlook, the State Government provided short term subsidies in land, industry taxes, employee training benefits etc. for locating here in the late 90's. The hiring benefits propagated by the state included a provision for paying a part of the training expenses of employees of multinational companies for every set number of employees hired. Such incentives were very favorable for businesses looking to set up shop.
- The decision of where within the city is largely up to the corporates, but the choice is limited as the lack of space within the city and high real estate costs has forced the establishment of tech parks on the periphery. By locating in these tech parks, which were established by private developers, the Government ensured that the process of establishing the business was streamlined and convenient. This was another incentive provided by the Government, which is still continuing.

- The IT firms in Bangalore are largely export oriented with a lot of their clients located overseas. This limits their need for face-to-face contact in local physical proximity, thereby making peripheral locations in the city quite sufficient for running operations.
- For the businesses themselves, the choice to locate depends on the aspect of business concerned. For sales operations, a city center location is very favorable due to proximity to customers. However, since IT is largely a service provision and often across nations, a peripheral location works just as well. This difference is evident in the scale of operations as well, back end services houses a much larger work force and subsequent floor space when compared to sales.
- After moving in, interactions with the Government continue via a Government affairs representative who builds relationships with the central Government and influences it on policy matters.
- GST- global sales tax is a new regime being incorporated in the country, which is already in place in most first world countries. In India, the tax differs from state to state, and cannot be claimed back by tourists. The initiative to establish a common tax platform across the country was initiated by the Government to make India an easier place to do business in. For such significant initiatives, the representatives from the corporations are invited both formally and informally to provide inputs on the schemes and policies being drafted. Large companies like Wipro, HCL, Infosys, Tata Consultancy etc. have extremely significant relations; more so than the international companies, with the central Government, and to some extent the state Government as well. This is because the state Government does not have a voice in public policy making.
- Policymaking interactions happen at the central Government level, whereas infrastructure and location decisions are discussed with the state Government.
- Despite the failing infrastructure in the city, companies do not play a significant part in improving the conditions. It is too late to rectify the issues across the city. This is one of the cons of such rapid localized growth, and the city is now suffering. Minimum representation and efforts are being made, however the corruption within city agencies serves as a huge barrier for getting work done. The democratic system of Government can be to blame in such a case. In comparison, China's communist system allows work to continue with minimum opposition to the Government directives.
- For new companies looking to Bangalore, the infrastructure woes is of concern to them. This has caused a dip in the flow of investment into the city, as compared to 10 years ago. This is not so true for those companies already here. However, the lack of too many alternatives in terms of other befitting cities still puts Bangalore in the top.
- The talent pool in Bangalore is one of the foremost reasons that keep the companies here.
- More involvement with the Government is not preferred, as it is expected not to be fruitful given the Government structure and corruption.

- Companies are now trending toward an exclusive campus outside the city, or 3-4 hubs across the city in an effort to consolidate their portfolio and employees. HP is in the process of creating these hubs, following in the footsteps of other companies elsewhere in the country. These hubs will require Government approval.
- This setting up of campus is common for domestic companies that prefer to own the land; thus far, HP has only leased space in the city.

#### *National Institute of Urban Affairs (NIUA)*

The key points from the interview with a representative from NIUA are listed below:

- The MOUD and NIUA therefore work together in drafting policy proposals for the country, and sometimes for specific states. They may or may not work with the state Government; this is highly dependent on the project and the existing ties with the officials in that state.
- In some cases, cities are selected for the prototypes of some of these schemes. NIUA helps in the selection of these cities, and trains the agencies to implement the scheme.
- Many international organizations like US Aid, Rockefeller Foundation, Ecorys etc. seek to work with the NIUA to get their foot in the door and establish relations with the Government. This helps speed up the approval process, and improves their visibility pan India. Research findings from these organizations are then put forward to the MOUD.
- Some outcomes from the NIUA include the JNNURM, Smart Cities initiative etc. NIUA does not solely develop visions and strategies; they are concerned with research for the policy that is being drafted.
- Interactions of the NIUA with the private sector are restricted to outsourcing work and receiving funding or grants. They do not interact with the business sector on policy matters.
- The NIUA works closely with the London School of Economics Cities program to develop the Smart Cities initiative.
- The center has no national stand on compact or sprawling cities, each city's development is very context based.

#### *Royal HaskoningDHV (RHDHV)*

If the location is found to be suitable for business by an entity, which may or may not be in the master plan as a commercial area.

There are business locations occurring in the residential area, because of the Change of land use, as per the Town and Country Planning Act applicable in most master plans in India.

Therefore, some land may be commercial if it permitted through a channel of change in land use, so long as it permitted as an activity. Though the master plan gives a sense of growth for business entity, like in

the new master plan where we put forth employment centers, a person can want to develop a large scale mixed used development within residential zone.

How are the employment centers selected? Is this selected in collaboration with the private sector to see which areas they prefer?

In Bangalore, the city is already quite developed. There might be issues when developing greenfield sites, Bangalore is not one of those. With a 10mil city, you can already recognize growth directions. In Bangalore, the growth direction is toward the airport- it acts as a magnet. Business entities look to establishing in close proximity to the airport, despite the fact that it is 45km from the city center. “When such major infrastructure is already established by the Government, they look for avenues where they can create a business environment through such a large scale investment.”

“What’s happened in Bangalore, is the Government is investing in some of these parks, therefore driving the development towards there.”

Business entities look for where new infrastructure is being developed, connectivity, water availability. Predominantly they are concerned with connectivity- how employees move from their location to the business centers.

“I would say Bangalore is primarily driven by the private entities. Government tries to regulate the development, but it is limited to granting permissions, development of infrastructure, granting change of land use etc... It is limited in that aspect.

Looking at the existing IT parks, ITPL and electronic city, infrastructure is crumbling in these areas. Is the Government re-investing in these areas, or has it been left up to the privates? How does it work for the existing scenario?

Unlike any other metro, Bangalore has seen stupendous growth. It’s probably adding 300-400,000 persons p.a. Delhi is also similar. The kind of people moving in (for a number of reasons- it is the only metropolitan city in Karnataka. Other cities are still around 900,000). Other cities like Pune Thane Nagpur etc. in Maharashtra display an urban hierarchy at the state level. Like Chennai, Coimbatore, Madurai etc. in Tamil Nadu. They have metros, cities, tier I, tier II- several levels. In Karnataka, Bangalore just absorbs everyone in Karnataka like a magnet to the core. It is adding tremendous pressure. In India we have a habit of not planning for future requirements, we see what is required today and follow the flow. But yes, there is investment in infrastructure, and the master plan guides the Government where and how to invest- whether a metro, new road links, public transport. It identifies the missing links, future traffic issues; we try to identify infrastructure projects.

Executing the infrastructure projects, is this done in collaboration with the privates? They would require a lot of capital investment.

Yes, it is hard to come by the capital investment. If you look at the metro, Metro is a huge capital investment project. Take connectivity, there are so many different bodies- Metro, BBMP, BDA, NHAI, PWD, railways department. Multiple agencies are involved in traffic and transportation infrastructure projects. The major challenge is funding. There is an attempt to finance one metro leg along the ORR through purely private funding from business entities who will benefit from it. KR Puram- Silk board.

The financial model is being worked out and it is the first attempt in India where private entities are trying to fund infrastructure at this scale.

Has this been initiated by them?

I think the private entities have approached the Government. It also involves urban planning so there are lot of bodies apart from metro. Value capturing through property tax and acquiring land etc. is still going on.

Government of India is also funding, international funds, EIB, ADB etc. investment banks. That's about 300km of metro line. Station names have been bought by the companies, already. The companies get revenue out of it. Ultimately, the public benefit from it, the Government is only concerned with the fact that there is a station, not what it is called. So, yes. Collaborations exist on both ends to invest in infrastructure.

What Government agency is actually involved in planning?

BDA is appointed, it is the authority. BMPC is formed of elected representatives. In short, BDA is responsible for the master plan, constitutionally as well. Yes, there are people who have approached the Government to institute the 73<sup>rd</sup> and 74<sup>th</sup> CAA, under which BMPC was formulated. But their duty is to preface the development plan, which is an annual plan that talks about how a project identified by various agencies sits together to ensure funding is available. Like a mini budget. They co-ordinate between authorities in case a land falls under both, they organize the phasing and financing in their master plan.

For example, the master plan is broken down into projects. And in phases. The projects are converted into budgets for the various line departments, that's where the BMPC comes into the picture. The line agencies within BDA – BWSSB, KPTCL etc. it ensure that long term projects are broken down into annual plans and funds.

Isn't it ideal to have just one body that does it, if BDA is constituted to plan the city why is funding organized by someone else?

BMPC is elected, and has no administrative rights.

IT and techparks, SEZ's are developed privately. Is there an interaction with developers to check where they plan to set up the SEZ's and if it aligns with the master plan proposals and designs?

No, we do not do that. We do not have direct coordination with developers regarding which areas they are looking at. Having said that, we have recently developed the land use plan, how the city could grow. Scenarios of if the city was limited by a certain size what would happen, or if the entire area was opened to development. For this we have called upon suggestions from the public in general, but not direct interaction with developers.

Having said that, in order to gauge the real estate market and phase work analysis we have conducted a study to ascertain where existing employment centers are and where the potential exists. In many cases phase one of the techparks alone is completed, so we need to know the future potential. So we check which direction commercial development is likely to happen, we also check land values. To be frank, we can't look at what developers consider. Being realistic, the master plan looks at giving the city a balanced development. That way the master plan is a land use policy tool, which decides growth and incentivizes

real estate in the city. We can't follow just the market requirements, that is only one aspect and there are several other aspects to be looked into. As a planner, yes we know the master plan acts as an inflation to the real estate sector, but we don't let this consideration drive the master plan.

Right now Bangalore is quite dominated by IT parks, so I was curious whether they were planned keeping in mind the master plan, or if they react to what has already happened in the market.

The previous master plan has allowed certain activities in Hi-tech zones, Business Zones or Industrial Areas. Developments have taken place within that. Broadly, the master plan has indeed influenced overall employment centers. So yes, the master plan is a guideline for growth. Developers look into a piece of land, but we look at the city as a whole. It happens that someone interested in developing a piece of land might conflict with the planning aspects. We don't consider individual plot level, we think of what the city needs, so we move top down. We know the existing developments and plan for 2031. So we assign the land use accordingly.

Timings of master plan.

Master plan 2015 was notified in 2007, Town and Country Planning Act. This will be valid until 2031 is notified, it will not lapse. In 2003, the draft of 2015 was published, and it was finalized in 2007. But developments start based on a draft publication. Therefore we see the effect of 2015, right from 2003. It's meant to be valid till 2015. Every 10 years it needs to be revised. Therefore 2031 will start revisions in 2026-27. It has lapsed now because of certain issues.

Is there a trend for it to continue growing outwards or is the Government actively trying to densify the city and control horizontal growth?

The nature of the city as it stands today is predominantly low rise high density. Though it is shifting to high rise, the basic nature will remain low rise for the next 5-10 years. This is broad, some pockets may be high rise. The present structure is such that it has taken place of the city for next 5 years. When you look at how the city works, private sector has a plan for 5 years, not beyond. So by 2021, the city will still be low rise high density. The new areas under development has a plotted development fabric. There are still areas that don't see plotted development, those will see high rise. There is a transition from low rise to high rise. It is indeed going to grow horizontally grow in all directions.

Do you think this is sustainable?

There are multiple factors. Bangalore is likely to attain 18-20mil by 2031 by our projections. Our analysis shows that the city is indeed going to expand, whether you like it or not. You can have a dialogue about sustainability, but the ground reality is the city is going to open up. This has to do with individual land owners, who can come to BDA and convert land to plotted development. Amalgamation of plots is very difficult in Bangalore because land holding is very less- around half an acre. Therefore if someone needs to amalgamate land for a large scale development. The process is tedious. So an owner of 1 acre just makes a gate and splits the land into plots and sells it.

We are looking at an intervention to contain this, not in terms of sustainability but to have a planned development. We look at forced amalgamation now, so people can't do a plotted development unless they have a particular size of plot. Because otherwise you don't get enough open space for people living in that neighborhood. That is our concern- to ensure there is a small park, neighborhood shopping, playgrounds. We are discussing a sustainable size for a module before a person can come to BDA to apply for approvals.



We are also looking at incentives for amalgamated development. We're trying to ensure how the city structure is available beyond 2031. Cities are going to be around for 100-200 years. So what is developed today- particularly road networks and public transport will continue. That is our focus- network patterns Green networks (ecological related), circulation network (transport related) and the third is a development module.

This is still under debate because of the social, technical, legal angles before we can pen it down in the master plan. "Yes, we are indeed looking at sprawl, but a planned growth."

*Independent researcher (institutional expert)*

How are policies at the central level translated to the city level?

Center makes policies on matters that it can legislate on, i.e., that are on the central list of the GOI. Constitution is divided into the central list, state list (cities, city planning, land, land development are state subjects) and concurrent list. Center cannot dictate what a city does because cities are a state subject, and so is land.

However, the center can provide a framework within which the state operates, like the smart city program. It is up to the city, it is a mission mode program on the part of the center. It is up to the city as to how to use the framework as an incentive, the city drafts its own proposal of what it thinks is a smart city and then sends it to the center for approval.

SEZ's are a guideline from the center. The city does not incorporate the SEZ's into the master plan, although this should be the ideal scenario. *"What really happens is different since there is a conflict between what is operationalized on ground and what the policy is talking about."*

States are requested to suggest locations for the SEZ's- who do they approach for this? Or do the private developers approach them? Is the BDA involved in any of the interactions regarding setting up of tech parks?

State works independent of the master plan. Very little legitimacy of the master plan, although it is a legal tool and strategic document. In practice, a master plan is only relied upon to argue for or against certain things. Many times, unfortunately the master plan only reacts to things that are already happening on the ground. For example, the state may already be putting in place a SEZ. Like the metro is done by a state agency independent of the planning agency. When the master plan is revised, the metro line is considered as a given. It then reacts to the metro line by identifying the areas that are being connected by the metro as potential areas of growth. This is the implication of the connectivity, and how the city will shape up.

The same system applies for SEZs and EPZ's- it is not necessarily wrong. But where we begin to lack, is that the planning can suggest the metro line alignment or where an SEZ should be located. However this window of opportunity is lacking in planning. *"Planning is therefore only reactive, does not proactively suggest."*

Development of SEZ's is up to private developers- even with greenfield developments. It seems to me that techparks dominate the city space and it is odd that they are not proactively incorporated into the master plan. Why is there no tie up between these two planning actions?



Timing is the issue here, but the larger problem is they do not talk to each other. The industries department is promoting the SEZ, and doesn't know or care that the BDA is making the master plan, and are not concerned if the SEZ sits well in the plan or not. A large problem is also that there is a plan making body and a plan implementation body- the two are different in most Indian cities. Implementation is mostly with byelaws or conversion of land use. Therefore, if someone is looking to set up an SEZ, he checks if it falls under BDA or BBMP area. These decisions are taken unfortunately at an incoherent and random manner. Corruption always exists, it complicates things more.

Do you think the private sector is involved at any level for planning decisions or infrastructure improvements.

Yes, absolutely. *"Perhaps they are involved a little more than needed."*

Where does the initiative come from?

The market or private sector exists for profit. There's nothing wrong with that, but it's something the Government needs to realize. The Government's role is to steer the private sector in such a way that it directs development to advance trends of the market. Unfortunately, since we have a weak Government, we are not able to do that job. In fact, the transition from state led to private led has a lot to do with international policies. It has very little to do with the domestic standing, it is a reaction of the country to international dynamics, policies. *"Development is being pushed by larger financial institutions like the World Bank and the IMF, who push private sector involvement."* Anywhere in the world, if there is collaboration, we now have enough experience to know that involvement from both sectors is very critical. Although, the state is what will deliver and the private sector is a secondary partner. We have gone through the cycle of development debate- started with the state, then moved to the market, and public-private partnerships, which are failing. Now we are going back to state led, although its role should be very different.

Different how?

It needs to be in the steering role, but not do everything itself. It needs to harness potential of the private sector and push development. The end goal should be clear. If the private sector determines the end goal, it will always be profit.

Would you say that the initiatives and partnerships before have failed because they have witnessed the results and the city has spiraled out of control?

PPP's have not worked. *"The sprawl of Bangalore is really a function of land prices, and real estate development."*

If the city is growing horizontal, it is because certain sections of the city are not accessible. So even if I would want to stay in the city center, I can't afford to because of the land markets. Therefore, I can only afford land on the periphery. So I invest there, and in some sense contribute to the real estate there. The expansion has to do with land markets and prices. That is the reality, and planning is all about land and land prices.

Two questions are critical- firstly, why are developers interested in the outskirts? It is related to affordability. It also has to do with the size for the companies. It is also an exercise in creating real estate. Infosys may not need such a large campus. *"Firstly, it is aspirational, secondly it has to do with assets and real estate, because real estate is booming."* They want to invest in land. Secondly, the benefits of an SEZ prompt them. That's an added factor.

Secondly, why is developable land only available at the periphery of the city? Why does an Infosys or Wipro want to invest in large parcels of land, is it really required? David Harvey's circuits of capital explains how a city is the result of the three circuits of capital.

Does the state or city Government have much say in where or how the SEZ's are set up?

The master plan guides, but whether the master plan gets enforced is where the big question is- that's the gap we're missing. We're looking at a revision now, to identify where to locate the larger employment hubs. Whether it gets implemented is a million dollar question- the answer is it doesn't. If you look at how the city has developed, many problems are because of the way the master plan has been implemented. Then perhaps what makes sense is why aren't they being implemented?

Do you think it has to do with lack of consultation with the people who will be developing the land in future?

No. It isn't required to consult them. Other dynamics take over. Developers can see that some land is earmarked for an employment center. Let's take an example where a company may want to come to set up campus there. They buy land, but by the time they get their approvals it is too late. The road that was meant to lead to the employment hub has not been implemented, so they do not want to shift. Now, why was the road not implemented? Because the Government was meant to do it but they could not secure land. This is due to high land prices, litigation etc. and courts get involved. So the land that was invested, the company walks out because the infrastructure won't support it. This is hypothetical, but how it works in the field. Land is a huge constraint in city level master plan infrastructure projects. We have very little ways of assembling land, it's too consuming and difficult. So ultimately everything is left to the market, they pick up land where available and just start developing.

Do you think it would help to bring companies on board during development? Would shared responsibilities help the process?

Yes. The Government needs to steer this. Many companies have a CSR, they could look at implementing part of the projects. This doesn't really happen right now because the state is not strong enough to make these arguments. In other parts of the world, maybe, but not here.

### *BDA*

By 2031, the projection is that 50% of the population will be working force. 3.3 million affordable houses are needed to support this growth. The IT sector along with tertiary services, contributes to 50% to the GDP. More than 50% of the SEZ's of the state are in Bangalore. The city also houses the majority of higher education institutions. IT and tertiary are only expected to continue growing and impact the city.

Are new SEZ's suggested by the BDA and implemented in the master plan?

Stakeholder consultations are always performed. Especially with ADB, Credai Bangalore, real estate consultants and some public consultations as well. Government agencies and NGO's are also involved. All these bodies give inputs to the master plan.

Do businesses directly give inputs on preferred locations?

Yes, but not individual companies. They do it through organizations like Namma Bengaluru to give feedback. Two angles to the growth of Bangalore. Citizens within the city limits do not want Bangalore to grow, because growth in population is creating chaos. Whereas land holders on the periphery want

development to happen. However, the city will continue to grow and expand horizontally unless other nodes or cities receive capital investment to develop. This will not happen anytime soon not in another 20 years, Bangalore will remain a prime city in Karnataka, and in India.

This status of Bangalore is credited to the State's push to brand Bangalore. Bangalore has gotten a name for itself as the IT capital of India, not by chance. However, the State is conflicted because they do not really have other cities to develop. We don't want sustainable development. Major decisions that are being made are too political, not planning oriented. Creation of new hubs need capital investment, and it isn't easy in our country's political scenario. Some parties have a vested interest in pushing Bangalore as an IT hub.

The city is struggling. How much infrastructure developments involve the private sector?

We have identified 8 issues that need immediate attention. Some are population growth, transportation which is a very serious issue, solid waste management, water supply, housing, power supply. Detailed studies have been done on each issue. Water supply and transportation are the focus now, without this the city will not survive. We don't think we can save the city, but we want to contain it and make it livable. We don't have any hopes that Bangalore will become a city for everyone, it just isn't possible now due to the infrastructure problems.

Traffic analysis at this scale has never been done before in India. We're trying to analyze how to reduce landfill areas, by segregating and processing at the primary collection level so it doesn't reach the landfill in the first place. The city currently provides 20tmc (thousand million cubic feet) of water, and we project that we will need 50tmc. To augment this we have tried a lot.

Do you receive inputs on these issues?

Yes, of course. The IT people run the show in Bangalore. I mean, speaking economically. Socially, that is another thing, forget it. That is a tragedy. Bangalore is losing on all aspects except economic.

Who approaches whom for inputs?

Many IT companies are invited to give suggestions. 10 consultations have been conducted even for this new master plan, over a thousand suggestions have been received and we are assimilating the data. Data has put on the website as well to invite feedback. This helps making our decisions.

Do you think the private sector should be more involved in planning for the city? Is more regulation needed?

The major issue is a lack of co-ordination between various agencies. The problem is not rules, regulations or the master plan. Where we have failed is implementation process. We have utterly failed in that. We are proposing new suggestions to improve coordination between existing Government agencies, and of course participation of private companies. We cannot avoid this, they have to be involved in developing the infrastructure. It isn't possible by Government alone. At the end of the day, we don't know how to live?

So, is the problem the number of bodies?

Yes, the problem is that there are too many bodies. Moreover, there is no monitoring of implementation. It just isn't being done. SEZ's are developed independently, and are not consulting the master plan.

Indeed, many citations also ask that the master plan proposals be implemented first. But no one bothers about that. KDB, housing board and even private agencies for example IT sector. They don't care, wherever they get land they want the land use to be converted even if the infrastructure doesn't support it.

We have tried. Land that is put forth for development should be first scrutinized to see where water, power will come from. But we were pounced and shouted at by the developers. At the end of the day they make a halfhearted display of available infrastructure. 3 bore wells are drilled, but I mean how can 3 bore wells sustain once the land is occupied? Everything is demand driven, and the pressure falls to the Government to meet infrastructure needs. Where do we create this from? If we check this first, and make regulations on minimum needs for land development, this issue will not happen. Efforts will be made.

We create hype in the city, because the economic capacity of the city has increased. We just buy land, that's all.

Can't you just say no to approving them?

Well, any development in the local planning area should be in conformity with the master plan. But... In the name of economic development and city branding, higher level power and steering committees give clearance without referring to the master plan. Then obviously the pressure will fall to the BDA to accept whatever proposal.. We are failing there, like I said, implementation.

#### *BMRDA*

Distinguish between BMRDA and BDA. BDA is the planning authority for the metropolitan area of 1200 sq.km. BMRDA is the authority for about 8000 sq.km. The procedure is that the master plan should be scrutinized by the director of town planning before it is submitted for approval. BMRDA commissioner plays the role of the town planning director and hands it over to the state Government. So the master plan is submitted to the state through the BMRDA.

BMRDA makes a structure plan which is a set of policy guidelines and objectives. So any master plans prepared need to be in accordance with this structure plan.

SEZ's are a Central policy, how is the BMRDA involved in setting up of the SEZ's or the policies themselves?

BMRDA is classified into Area Planning Zone (APZ) and Interstitial Zone (IZ). The APZs are developed in phases under the jurisdiction of various building authorities (not just Bangalore). IZ Interstitial Zones are reserved for development. The master plans are prepared for APZ, each APZ has an epicenter.

When talking about SEZ's, they are more an economic incentives for foreign companies to operate. They can come here and operate on Indian land, while being treated as a foreign entity. It is more an economic policy with tax concessions. You are treated as if you are not part of the country. The previous Government had parameters for developing the SEZ in terms of area.

Real estate developers try to get land approved under the EPZ or SEZ. Companies prefer this as it helps them from a tax perspective. I think there are no more SEZ's, maybe the policy is not existent anymore, or it operates under a different nomenclature.

Can you tell me about the approval process for an SEZ?

SEZ is a taxation concession. If a private group has land that they want to develop into an IT park and receive SEZ status, the chances are it will not be considered. The High Level Clearance Committee (HLCC) at the State Government level need to be approached for investments over a certain amount. It consists of some representatives from the State industries and finance bodies, as well as the BDA. However, the State is not the approval granting body- it is the finance industry. However, they do make recommendations. Just any land cannot be developed into an SEZ, it needs to be in accordance with local planning regulations.

Are there any collaborations that exist between the private companies and local Government authorities?

World over, when cities become unbearably congested, they try to decentralize the structures. Netherlands is a good example of this, there are specialized centers. There is a logistical, financial and political hub. There is no mixing of functions, that isn't the case in Bangalore, or even Mumbai. It is like putting LA and New York together, it isn't going to help anyone, it will only deteriorate cities further. In Bangalore, there is a similar trend now. However, in 2005-06 there was an attempt by the BMRDA to develop integrated townships . 5 locations were identified to be developed as specialized hubs- IT, manufacturing, hardware etc. Basically the economic driving forces for the locations were identified, notified and some projects were even awarded to developers. But, the Government changed and the developers were no longer comfortable with the new Government, so they pulled out of the project. That's the nearest we have reached to planned decentralization. This is 10 years ago.

So, how would you rate the interaction between the private sector and the Government now?

There are way too many regulations, too much corruption. Land is highly regulated, especially in Karnataka. Agricultural land ownership is restricted. But in Tamil Nadu it is different, anyone can buy land, and do what they want. Ease of conversion of land is tiring in Karnataka, more so in Bangalore. However, in Tamil Nadu the minute land is designated as industrial or residential in the master plan, it is deemed to be converted. The job of developers is then to receive an approval for development, not an approval for change of land use.

Master plans there are much more powerful. In Karnataka, most times they are meaningless colors. They are not legally binding. There is no minimum area for development. Authorities would not refuse even small developments. Now they have tried to bring in a minimum area, but I don't think that applies anymore. It has resulted in lot of patchy development. If you plot existing land use before a master plan is drafted, it looks like a mass of different colored rice grains.

Even if the master plan is in place, piece-meal development is still happening.

In states like Haryana, there is minimum urban block size necessary for development- 25 acres. Even if there are 100 different owners, they are required to come together for development, or be superseded by a larger private developer.

Would you say that the private developers need to get more involved in these planning levels?

The more involved they get, it could be detrimental. It is easy for them to sway the Government. If the Government feels it will lose their business, they will give in. Over intervention of the private sector has happened, and is happening. This occurs everywhere, but the Government in Karnataka is weak, so this occurs very often in Bangalore.

There is a fundamental flaw in BDA's planning agenda. As a planning agency, they do enough damage, but as a development agency it is even more horrendous. Firstly, they force farmers to part with land at a price approved by the Government. Secondly, when land is designated for development, small parcels of land are excluded from that large scale development based on favors. The result looks like rats have bitten off chunks of it. What kind of sensible plan can come out of that? There are several fishes within the Government process that allow land to be de-notified. Finally, a larger city vision is missing.

Furthermore, land development is usually taken over by the 5<sup>th</sup> or 6<sup>th</sup> owner of the land. We give subsidized land to people, buy land from farmers at a low rate. Earlier, if land was not developed within 10 years, it was taken back by the BDA. This doesn't happen anymore. Now it is free for all. You can do what you like.

Does this also happen for larger parcels?

Government sponsored projects like the Electronic City have served as catalysts to start the IT revolution. On the other hand, with subsequent large scale developments the Government requested minimum areas, but did not make it happen, the proposals fizzled out. This is because the private sector thought the political environment was a little volatile at the time.

The earlier trend was that developers would somehow accumulate 25 acres to receive SEZ status for their development and benefit from tax concessions, and it was just easier to lease. All said and done, however patchy the development and however crooked, our office occupancy rate is the highest in country. Our vacancy rate is only 4%. Even the National Capital Region (NCR), is like 10-20%. In the land of the blind, the one-eyed man is king.

The system doesn't necessarily work well, but India is at an advantage because we can employ people and labor is cheap. People want to work in Bangalore, it sustains the demand. The cost-benefit of India sustains demand for office space, industrial space etc.

What level of Government does the interaction between the private and public sector happen?

Most states pride themselves with a single window clearance system. Karnataka has it- the HLCC, where you get multiple clearances under one roof. Investments beyond a certain amount also meet separately with the Chief Minister of the State. But investment proposals come to Bangalore alone. When developers approach for land acquisition in the city to develop IT parks, if other cities are suggested the representative gives an ultimatum- it is either this, or I will go to Chennai, Hyderabad or Pune (Tier I cities in other states). Therefore, though the Government dangles the carrot, there is no one biting it.

Why Bangalore?

It is perception. The whole of India seems to think Bangalore is the place to be, so they make their way here. Let's put it this way, the day Bangalore stops being attractive, or it gets water once in 10 days, that image will change. We will get there, but there will be no other city in Karnataka ready to absorb the interest. They will go to other states, and we will lose out.

## V. Major reasons for choosing Bangalore

**Table 10.5** Importance of locational decisions  
(Horizontal percentages)

Major Factors for Choosing Bangalore as a Production Base	Very Important Locational Decision (Rank 1,2,3)	Important Locational Decision (Rank 4,5,6)	Less Important Locational Decision (Rank 7,8,9)	Total (%)
<b>Government Related Factors</b>				
• Government Support	50	44.2	5.8	100
• Software Technology Park	0	23.1	76.9	100
• Electronic City	0	7.7	92.3	100
<b>City Related Factors</b>				
• Availability of High Technology Professionals	82.7	11.5	5.8	100
• Availability of Research Institutes and Laboratories	82.7	17.3	0	100
• Already a Major Centre for High Technology Production	36.5	51.9	11.5	100
• Cheaper Cost of Living than Bombay/Delhi	21.2	67.3	11.5	100
• Favourable Physical Climate throughout the year	13.5	65.4	21.2	100
<b>Others</b>				

**Table 10.6** Domestic and non-domestic firms: Importance of locational factors

Major Factors for Choosing Bangalore as a Production Base	Foreign Owned IT Firms			Joint Venture IT Firms			Domestic IT Firms			Total
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<b>Government Related Factors</b>										
• Government Support	1	4	11	0	8	8	2	11	7	52
• Software Technology Park	13	3	0	16	5	0	11	4	5	52
• Electronic City	15	1	0	15	1	0	18	2	0	52
<b>City Related Factors</b>										
• Availability of High Technology Professionals	0	1	15	1	2	13	2	3	15	52
• Availability of Research Institutes and Laboratories	0	0	16	0	2	14	0	7	13	52
• Already a Major Centre for High Technology Production	1	10	5	2	7	7	3	10	7	52
• Cheaper Cost of Living than Bombay/Delhi	1	15	0	2	10	14	3	10	7	52
• Favourable Physical Climate throughout the year	1	15	0	6	9	1	4	10	6	52
<b>Others</b>										
• Sheer Convenience	16	0	0	12	3	1	11	3	6	52

Key:  
 Less Important Locational Factor  
 Important Locational Factor  
 Very Important Locational Factor  
 Source: Field Survey, 1995

(Srinivas, 1997)

## VI. SEZ incentives

(Ernst and Young, 2016)

### Q.2.2 Direct tax incentives for SEZ

Nature of business	Quantum of deduction
Undertakings/units located in SEZs and engaged in the manufacture or Production/ provision of services	<ul style="list-style-type: none"> <li>▶ 100% deduction in respect of export profits for 5 years</li> <li>▶ Subsequently, 50% deduction for next 5 years (subject to certain conditions)</li> </ul>
SEZ developers	100% deduction of their business profits for 10 years (out of 15 years)
Offshore banking units and international financial services centers located in SEZ	<ul style="list-style-type: none"> <li>▶ 100% deduction in respect of the specified income for five years</li> <li>▶ 50% for the next five years</li> </ul>

*End of report*

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