

The city of bangalore tourism essay



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The city of Bangalore is known as the silicon valley of India. It is a no brainer that IT companies play a significant role in Bangalore's GDP (as well as Karnataka GDP). Nearly two decades of impressive growth in the sector has changed the face of Bangalore quite literally – the landscape and the population have grown manifold. This unabated growth has put tremendous pressure on the limited and precious resources of Bangalore city – like water, forestry, electricity etc.

As natural fallout, the quality of life has been impacted. Whether it's the congestion on roads, the irregular water supply (leave alone the quality of water), unprecedented shrinkage of water bodies, greater socio economic divide, Bangalore has seen it all!

This project makes an earnest attempt to qualify and quantify some of the above trends. The inputs have been obtained primarily from secondary research – Research reports, Government databases, Journals etc. We floated a survey among IT professionals to find out the level of sustainability initiatives in their companies, their own perceptions of day to day issues facing Bangalore city and the like.

During the project, we have realised that data availability has been a major concern. The reasons have been manifold. For one, there are umpteen government agencies involved in recording various data that were necessary for the project. In some cases, when the needed data was available, it was either obsolete or did not capture the entire trend over the years or it was at a macro level (Karnataka state level as against Bangalore city level). Due to these barriers, it has been difficult for us to quantify some of the

observations we have made in this report. We hope the drive by Karnataka Government's Directorate of Economics and Statistics to participate in Indian Strategic Statistical Plan, to centralize Government data (initiated in 2009) will prove a major step forward in this lacuna.

We had to make approximations/estimates along the way to show how much of a positive or negative impact IT sector has had on Bangalore. The overall idea has not been to either praise or criticize IT sector for what Bangalore is today. Instead it has been the idea to present the growth of IT sector in Bangalore city and to see if there are any interesting trends that emerge when comparing with issues/challenges/positives that Bangalore city faces. While it might have been ideal to find solutions for many of the topics/issues we raise in this project, due to the paucity of time, the focus has been more on understanding the various aspects of Bangalore city keeping IT sector in mind. Where possible, we have provided recommendations and insights that we gathered during the project on how we can make Bangalore and IT sustainable.

During this journey we studied various frameworks proposed by researchers/organizations on sustainability. We also studied the various sustainability initiatives undertaken by major IT companies like Infosys and Wipro. Considering the Linearity issues, given the cost arbitrage advantage waning away, these major companies have taken initiatives in this area to be leading examples for other companies to follow.

We believe sustainability has received a critical following in the academic elite but is in a nascent stage in terms of co-ordinated implementation

across business, government and society. We are hopeful of seeing a lot of seminal and creative activities happening in this area in the days ahead!

Introduction

India is experiencing rapid growth and a consequent increase in urban populations. In the western world, the development has been resource intensive.

Over the past 200 years, economic development has depended on a shift from the use of renewable resources – energy and materials that can be grown or harnessed from the daily energy of the sun – to non-renewable resources dug out from deep underground.

Understanding Sustainability

Bangalore's population growth coupled with an increased rate of resource consumption, and waste accumulation, will lead to environmental decay, and land, food, and water shortages in course of time. There are also significant changes in global environment such as climate change, increased waste and pollution, and the depletion of natural resources. Further when resource amenities are unevenly captured the rift in the society increases further polarizing communities and create disastrous outcomes – Case in point are recent uprisings in the Middle East and North Africa. Also urban centers like Bangalore are not always healthy places and have a sizeable underclass of people who are poor, sick, unemployed or exploited. Given such a scenario we feel that business-as-usual scenario will bring great disasters to humankind, and is not sustainable.

Sustainable Development is thus about mobilizing successfully international, national, community, and human intellectual resources in general, towards solving problems that are, overall, degrading the life support system, compromising the viability of local communities, and hurting the health and well-being of individuals.

According to Jacobs, Gardner and Munro, (Okechukwu Ukaga, 2010) the five broad requirements of sustainable development are:

integration of conservation and development

satisfaction of basic human needs

achievement of equity and social justice

provision for social self-determination and cultural diversity

Maintenance of ecological integrity

Sustainability as 3 nodal areasAs we have seen already, sustainability is thus, a relational concept, referring to a series of practices and processes that ensure ‘ development’ does not exceed the ecological ‘ carrying capacity’ of the planet.

A system based definition (Robinson J, 1997) considers three imperatives as follows

The “ ecological imperative” is to remain within planetary biophysical carrying capacity.

The “ economic imperative” is to ensure and maintain adequate material standards of living for all people. The “ social imperative” is to provide social structures, including systems of governance, which effectively propagate and sustain the values and culture people wish to live by.

In a broad sense Sustainable Development is expected to achieve the following as defined by World Bank economist ‘ Herman Daly’ (Daly, 2009)

The rate of use of renewable resources not to exceed the rate of regeneration.

The rate of use of nonrenewable resources not to exceed the rate of development of sustainable alternatives.

The rate of emission of pollutants not to exceed the capacity of the environment to absorb them

Why Sustainable Business Initiatives

Business is held back by the same factors that keep individuals and communities in poverty: poor education and healthcare, environmental deterioration, and the absence of adequate infrastructure or an effective rule of law (WBCSD, 2010).

Production of goods and services by business and industry also depends on a steady supply of raw materials. If certain elements of nature are being excessively extracted, the change in the balance of the life support systems may in turn also upset the human habitat, affecting the health and well-being of humankind. Therefore, the over-harvesting of nature for

manufacturing materials will ultimately impact the quality of life of the human community.

On the disposal side, both industrial waste and garbage are not part of Earth's natural cycles and has to be tackled with sophisticated planning and technology as well as clear communication to future generations.

The need is also for transparency, fairness, rule of law, reliability of institutions and access to legal remedy given the scale of change in our daily method of business that is foreseen to achieve significant progress

Although a huge challenge, sustainable development also provides a vibrant business opportunity given the need to develop the new policy frameworks, right technologies and better business models for all around development.

Methodology

Given that IT sector has a large footprint in Bangalore, we went about this complex exercise by putting together a mindmap which identifies the various touch points of IT sector in Bangalore's economy, ecology and social fabric. (An enlarged view of the mindmap below is provided in Appendix). While the list identified might not be exhaustive, we think that this is a good starting point. It would have been ideal to traverse all the branches in this mindmap and make a comprehensive report on the effect of IT industry on Bangalore. Given the paucity of time and the lack of centralized data on Bangalore, we could only cover a limited portion of the same.

Bangalore – among fastest growing cities in India

Bangalore is among the world's fastest growing cities, a poster child of India's growing economic prowess; a city whose employment generation and incessant growth in the past decade has made it both sought after as well as envied.

Bangalore today is the chosen destination of both expatriates and educated middle class professionals as well as engineering graduates who are flocking to this city, which has turned into a hotbed of private investment in the IT and ITES sectors. These sectors have enormously contributed to this growth of Bangalore. The urban landscape of the ' Garden City' has now been transformed into concrete jungle of chrome and glass facades, shopping malls and branded stores, high rise apartments and overcrowded streets full of traffic congestion.

This unprecedented sharp growth in the city of Bangalore has led to rapid urbanization and has transformed the character of the city putting tremendous pressure on its infrastructure, resulting in an impact to quality of life in Bangalore.

Bangalore city has grown from approximately 177km² in 1977 to 775km² in 2011. The city has seen a population growth of 48.93% in the last decade and has shown an average annual growth rate of 2.64%. In comparison India has shown an Annual growth rate of -2.97% in the last decade. According BDA estimates in 2007, 60% of Bangalore's growth is natural, while 25% is through migrant population. The remaining 15% is attributed to integration of erstwhile rural areas to Bangalore Agglomeration (JNNURM, 2009).

Over the last few decades, the economy of Bangalore has transitioned from a public sector based economy to a textile industry based economy to a cluster of high technology companies. IT industry has grown by a CAGR of 25%+ over the last 2 decades. Exports account for more than 75% of software production, and thus is attributed to the global outsourcing demand for software development at low cost locations with sufficient skilled labor.

It can be conservatively estimated that close to 36% of all IT labor in India is located in Bangalore.

Number of People employed in IT sector (in lakhs)

Until mid-90's Bangalore was a middle class town with major public sector companies and educational institutions. These units attracted both skilled and unskilled labor with strong unionization. The lower end PSU employees could easily fit into the lower middle class of Bangalore and had access to Bangalore's technical education. The rapid growth of knowledge sector attracted IT firms which grew rapidly on the eastern and southern outskirts of the city. Since the sector was driven by software exports, infrastructure was not seen a bottleneck in the initial stages of Bangalore's evolution.

(Basant, 2006)

Bangalore's transformation has been aided by an active support policy of the Govt. of Karnataka for IT sector, as well as, the inherent clustering advantages of the city in terms of availability of skilled people and reputed institutes of higher education.

Growth of Software of exports from Karnataka (STPI Bangalore, 2010)

IT sector in Bangalore is made of top tier IT services companies such as Infosys, Wipro, TCS, Satyam, IBM, Accenture, and other captive centers of large MNCs such as Cisco, Intel and Honeywell and other small and medium enterprises.

The graphic below provides a view of changing composition of Bangalore's GDP and a significant move away from manufacturing related sectors. The significant increase in Real Estate's contribution to Bangalore's economy also points to the fact of an existing real estate boom and increasing urbanization of the city.

The graphic below shows a significant shift in the contribution of the various sectors towards Bangalore's economy. The Tertiary sector which is consists of

Transport, Storage and Communication

Trade, Hotels and Restaurants

Banking and Insurance

Real estate, ownership of dwellings and Business services

Public Administration

Other services

It is also seen that the while 66% are employed in the Primary sector, the 56% of per capita income is derived from the tertiary sector (Karnataka Government, 2010).

Changing Profile of GDP contributors in Bangalore's Economy

But this substantial growth of Bangalore has also invited its fair share of issues – positive/negative. A singular industry being a focal point, a powerful alliance between corporate elites of the city and the government has been criticized as equally responsible for the mishandling of urban growth.

From various sources such as Department of Economics and Statistics, ZDNet IT Professionals Survey, we have arrived at the above figure which substantiates the fact that there is a growing economic disparity among the different sections of Bangalore's workforce.

From late 90's to early 2000's Bangalore started showing the strains of a fast growing mega-city with growing social inequality, mass displacement and dispossession of land, proliferation of slums and congested roads.

Industrial areas in Bangalore

Infrastructure Effects

Bangalore has seen an explosion in the number of vehicles on some of its major arterial roads. The graphic below gives a sample of different category of vehicles that are seen. We see a large increase in private transport on Bangalore roads such as 2-wheelers and Cars/Jeeps/Multi-utility. Bangalore's road infrastructure is today being seen as a big bottleneck in the economic growth and quality of life in Bangalore.

The following exhibit provides a view of (See Appendix -A : Vehicle Growth in Bangalore)

The growth of vehicles on Bangalore roads could be attributed to the following factors:

High disposable income of IT employees: The salaries of IT employees grew at a healthy pace. Even in absolute terms, they outstripped the salaries of non-IT sector employees. Car companies, Financing companies and leasing companies were quite active in pursuing this sector.

Employee friendly car lease policy:

Companies leased the vehicles on behalf of the employees. Companies benefit due to the accounting principles of leased assets. An example of this could be understood from the calculations shown below (Crisil Research)

Employees gained by way of tax benefits, reimbursement of operating costs, free insurance premiums and of course the upscale in social image of having purchased a four wheeler car.

Whilst the above two factors show a win-win for both the company and the employee, it may not be such a good news for the Government and Bangalore roads. Government loses its tax revenues. Bangalore roads experience a bigger wear and tear (Bangalore is quite famous for the pot holes on the road!) and they are choked.

Due to the traffic congestion that results, its not uncommon to sight a petty quarrel

Easy availability of auto loans with teaser rates: The following graphic shows the trends in auto loans with majority of the disbursements of such loans going to the top cities of India.

(Crisil)

The blue circle identifies Bangalore's traditional residential hotspots. The red circles identify the major IT concentrations in the city. There is a considerable commute that has to happen on a daily basis in Bangalore to cover the same. Lack of Public transportation : Due to lack of Mass Rapid Transportation system and the clustering of Software technology parks in certain pockets of the city, IT employees had to travel quite a distance (as provided in the figures below) to reach their destination.

The data above helps us understand that there is a significant amount of population that travels across the city, and utilizes private transport such as two wheelers and cars for the trips. This not only adds to the congestion in the city but also increases vehicular pollution (Sudhir Gota, 2008).

It is also interesting to note that there is a decreasing trend in terms of reported road accidents in Bangalore. This could be due to multiple reasons

The average speed of driving in Bangalore is around 11km/h due to high traffic congestion. At such bumper-to-bumper traffic movement there could be lesser chances of accidents. Is this a blessing in disguise!!

The trend could also denote the number of accidents that are going unreported in Bangalore, and if true will require a better way to track and report accidents in Bangalore.

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A common adage in Bangalore is the statement “ In India people ride on the left of the road, while people in Bangalore ride on what’s left of the road”. This adage we feel symbolizes the severe strain on the road infrastructure in this city.

Social Effects on Bangalore

Corruption

Corruption has been rampant in Karnataka and especially in Bangalore, going by the statistics provided by ipaidabribe.com website. Bangalore is home to “ water mafia”, “ real estate mafia” and the like.

It is not uncommon to read the Lokayukta’s activism in Bangalore’s newspapers. The Times of India article dated February 5th 2011 quotes Prof. G. Venkatasubbiah’s presidential address at the 77th All India Kannada Sahitya Sammelena as saying “ Now, Karnataka has earned the dubious distinction of being the most corrupt state in the country”. From the statistics obtained from ipaidabribe.com, Bangalore leads in the number of bribery cases reported! While it would be difficult to segregate the impact of IT sector on this issue, we can safely assume that corruption is one of the many manifestations of a greater socio economic divide. One could easily debate the accuracy of these metrics, yet it is not easy to ignore such statistics.

Crime

Bangalore has been considered by and large a safe city. But the growing influx of migrants, increasing urbanization, and a major part of the BPO workforce that work in night shifts are considered some of the concern areas

for the increasing crime trend in Bangalore. According to the National crime Records Bureau which analyzed the crime statistics in 35 major cities in India for the year 2009, 9.4% of cognizable crimes across these cities have been reported from Bangalore. Bangalore is said to be second only to the capital of India, Delhi in the number of IPC cases registered (Kumar M. S., 2011).

Health

The sedentary lifestyle of IT/ITES employees results in poor health unless compensated for with appropriate active lifestyle. Multiple surveys have suggested that a sizable population of Bangalore's corporate workforce is susceptible to various health ailments. Stress resulting due to:

Catering to customers/clients spanning across different time zones of the globe.

Exhaustion due to challenging software delivery schedules.

Constant pressure to upgrade skills to make oneself relevant and employable.

Philips Health and Wellbeing Index Report-2011 (Philips India, 2011), a survey conducted by Philips Electronics India finds that 39% of Bangaloreans approach mental health professionals as against the national average of 9%. An good indication that Bangaloreans are the most stressed out!

In the personal interviews we had with middle managers of IT companies, we found that many of their team members/colleagues have revealed their plans to retire at an early age of 45 years. This could be a result of either a

good wealth accumulation at an early age or the ill effects of a stressed out work life taking its toll on their mental and physical wellbeing.

Ecological Effects on Bangalore

Lakes

Bangalore, the garden city once boasted of 81 lakes in the city limits and close to 200 lakes in around the city. Today among these hardly 31 show any signs of existence. Around 54% of the original lakes have been encroached upon for urban buildings (Kumar, 2011). The study finds 66% of lakes are sewage fed, 14% are surrounded by slums while 72% showed loss of catchment area. Furthermore, the lake bunds are used as dumping yard, significantly polluting the water source.

In an article in Times of India (Nandi, 2011), the reporter states that Untreated Sewerage water allegedly from high rise apartments off Sarjapur road is the main root cause for high contamination and sinking oxygen levels of Iblur lake.

Water

Though being blessed with near normal rainfall in most of the years, Bangalore faces huge water shortages in peak summer. Bangalore has 20% to 40% dependence on groundwater (Vishwanath, 2009) which is being pumped out and used unscrupulously but is being counted among cities that are non-groundwater dependent. A recent report by BWSSB says, given a projected population of 7.5 million by 2011, Bangalore has a shortfall of 676 MLD of piped potable water which is nearly 42.8% deficit from the overall

demand. The picture is even more grim when looking at the projections over the next 25 years

45% of water usage in Bangalore is counted under unaccounted for water category (UFW). Furthermore the significant reduction in water bodies across Bangalore has also resulted in increase in ambient temperature of Bangalore.

We consider the following as some of the major points of consideration from various studies http://geoinformatic.org/sites/default/files/images/Greater-Bangalore_in73to06.jpg

Discriminant waste generation

Irrational behavior of substituting money for water.

Sewage Treatment plants for large apartment complexes not working.

Multiple governments departs overseeing the management of water.

Rapid urbanization has resulted in deterioration in ground water table.

Decrease in flora, fauna, and catchment areas, number of water bodies.

Water bodies have disappeared and water quality has deteriorated, our survey with IT employees, reveals that this is not a major concern at all!

Nalika Gajaweera, in her internship paper with Equations in March 2006 (Equitable tourism) writes about the growing inequality between the upper middle class IT employee who has the luxury of buying ground water through tankers as against the urban poor as follows

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“ Three women dwelling in the slums in the backyard of the IT Park are part of the maintenance crew for the IT park; but they have to walk 2km, past the steel and glass structures, to the nearest water source to fetch water for their personal use. While the lake that they reside besides smells of toxins and tainted green, the modernist architectural glass structures that tower over their slums are tinted black and carpeted with lush green grass”

LAND

Michael Goldman in his paper on Speculative Urbanization (GOLDMAN, May 2011) provides the following view of the growing tussle for space and growth and the resultant rampant real estate growth.

“ In the case of the expanding IT corridor on the southeast periphery of Bangalore, one finds villages such as Bellandur caught in the eye of this storm. In 2002, many of Bellandur’s small-landowning farmers refused the price set by KIADB, as their land was fertile, highly productive and alongside a large lake that supplied fish and irrigation water plentifully. Over time, many farmers living in the vicinity of the IT corridor being developed have sold off their farmland because of pressure from KIADB, and from the developers offering a better price to expedite the land acquisition process. Although as recently as a decade ago, Bellandur farmers probably produced cauliflower, cower, spinach, rice and coconuts for Bangalore city markets, the acute densification of the area by IT firms has rendered its main water source – the once majestic Bellandur lake (the largest in Bangalore) – unusable for farm irrigation, contaminated by the untreated toxic industrial and household waste that flows into it. As the new IT thoroughfare cuts right through the village’s farmland, and as individual

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plots of land were sold piecemeal to developers or the government in order to construct IT campuses, farming has become untenable”

With the sunset clause of Software Technology Parks nearing , scamper for Special Economic zones will follow suit. This would be good news for the Real estate industry, but may not be a great news for Bangalore city and its environment. The silver lining would be the conscious efforts by IT industry to comply with LEED gold and platinum standards. Infosys and Wipro in their sustainability reports have clearly mentioned their support for such compliance in all their new campuses that are being constructed.

E-Waste

E-waste generation emanates due to the rapid technological obsolescence and the need for companies to be at the forefront of technical superiority. The large usage of Electronic equipments by IT companies means that there is a lot of potential for generating E-waste. The State of Environment Report Bangalore 2008 has clearly mentioned the proactive measures taken by Karnataka Pollution control board to commission e-waste recyclers like E-parisara and Ash Recyclers to segregate and recycle such waste.

IT companies for their part have also been able to identify the e-waste issue and have taken upon themselves to donate equipment which is no longer useful for corporate usage to the deserving public. Thus the concept of Reuse/Recycle/Reduce is clearly at play. It is classic case of sustainability initiative by the IT industry and the Government agencies working closely together. Thus it is a significant win-win for the society, the companies and the environment.

Sustainability Initiatives by IT companies in Bangalore

IT companies and its employees have an all-around impact on both the economic factors and socio-ecological factors. For example, the high disposable income of a typical IT employee could have potentially led to the economic growth in other organized and unorganized sectors in Bangalore. As a natural fall out, this could lead to high inflation, lower quality of life, higher corruption and increased socio-economic divide.

Infosys/Wipro in 2008 declared that Bangalore's infrastructure as a bottleneck. Today Bangalore is no more the largest center for Infosys.

Major IT companies in India have large cash surpluses. It has been seen that these are not coming into Bangalore as investments in Research or education but are being held as cash or being utilized in M&A. This can be substantiated with more detailed analysis.

Figure Typical IT company's Business interfaces
It is seen that Sustainability has been identified as a focus area in some of the top tier IT companies such as Infosys, Wipro and TCS. Below, we have provided a summary of sustainability initiatives of Wipro and Infosys.

Sustainability initiatives of Infosys

Infosys Technologies Limited founded in 1981 is arguably the poster boy of India's Information Technology companies. Infosys has been active in taking sustainability initiatives.

Stressing the importance of sustainability, its chairman and chief mentor Mr. N. R. Narayanamurthy states the following in the company's sustainability report of 2009-10:

“ Our vision is to be a responsible, leading organization working towards the greater common good by setting global benchmarks for a sustainable tomorrow”

Infosys has identified sustainability as a focus area in its brand positioning as Infosys 3. 0. It explains Sustainable tomorrow as follows:

A sustainable tomorrow can come about only when we can say with confidence that we do not carry the burden of the past, or the guilt of the present. It is the ability to say “ yes”.

Yes, we are sustainable from the economic point of view

Yes, as a conscientious global organization, we consumed nature's resources only to the extent needed for the organization

Yes, as integral part of the community, across geographies, we contributed to its social development.

Yes, we are ready to stand up and be counted.

The theme of “ sustainable tomorrow” is broken down into three key focus areas:

Social Contract – Being ethical, practicing good corporate governance principles and engaging with all stakeholders to meet both Infosys’s and client’s sustainability goals.

Resource Efficiency – Improving resource utilization by monitoring usage of such resources like electricity at a granular level at all office locations.

Green Innovation – Collobarating with customers to offer solutions in smart grid, intelligent infrastructure and data centers, and helping customers achieve their sustainable goals.

To make business sustainable, Infosys follows the PSPD model of Profitability, Sustainability, predictability and de-risking business.

Infosys collaborates with global bodies like WBSCD, GTZ, TERI, WEF and UNGC by participating in their external forums.

Sustainability initiatives of Wipro

From its sustainability report 2008-09, Wipro identifies a number of megaforges that it predicts will impact the world in times to come. These are enumerated as:

Climate change

Looming water disaster

Sustainable cities

Universal education

Diversity

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Inclusivity and human rights

Transparency

Sustainable food security

Eliminating poverty

Wipro believes that appropriate goal setting with quantifiable is the key to take the sustainability initiatives forward. By setting quantifiable metrics to monitor and adapt, it believes it can make progress in its sustainable journey.

At the heart of its sustainability philosophy is the “ Mobius strip” – what Wipro calls as a metaphor for the multi-dimensional challenges of sustainability. What this essentially translates to is the fact that sustainability challenges do not have defined start and end points and there are no clearly defined boundaries between the economic, social and ecological dimensions of any problem.

Wipro is operationalizing its strategic vision by clearly identifying and executing the following:

Leadership backing for sustainability initiatives

Prime Accountability of sustainability initiatives lies with a distinct group

Acquiring commitment from key internal functions like finance, facilities etc.

Create capacity and involvement at all levels of the organization

Continuously learn and improve by partnering with external stakeholders

Integrate into mainstream planning, budgeting and review processes

Create a robust investment framework that provides guidelines for internal investment proposals on sustainability.

A survey of IT Employees in Bangalore

As part of our study we ran a survey across the PGSEM participants who we consider a good representative sample of the IT sector in Bangalore. We received 44 responses and we provide below, our analysis of the results of th