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Department of Foreign Affairs
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Ministère des Affaires étrangères
et du Commerce international

DOCS

BUSINESS OPPORTUNITIES IN BANGALORE, INDIA

Prepared by:

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in association with
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Bangalore

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BANGALORE

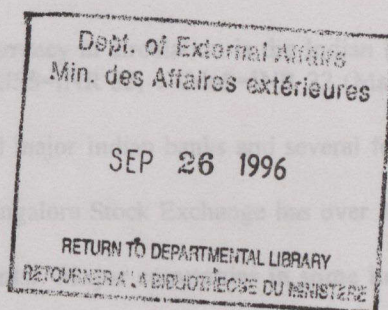
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BANGALORE

BANGALORE AT A GLANCE

Bangalore, the capital city of **Karnataka State**, emerged as a significant industrial and commercial center in the 1950's and 60's. It's cool and relatively dust free environs, and strategic location, made it an automatic choice for several Government of India research institutions and public sector projects in the fields of defense, aeronautics, engineering, electronics and telecommunications.

With the partial liberalisation of the Indian economy in 1985, and a more rigourous effort in this direction in 1991, Bangalore gained further prominence as it attracted considerable foreign and Indian investment in electronics, engineering, software development and the garment industry.

A profile of Bangalore is presented below:

- **Area** : 300 Sq Km
- **Climate** : Temperatures range from a low of 12°C in December to a high of 37°C in May.
- **Demographics**
 - Population (1991 Census) : 4.1 million
 - Projected Population (2000 AD) : 7.0 million
 - Growth in Population (1981 to 1991) : 70%
 - Languages : Kannada, Tamil, Telugu, Hindi and English.
 - Income Distribution (Monthly Household) : Upper (INR 4,000 +) : 14.1%
: Middle (INR 2,000 - 4,000) : 26.9%
 - Education : More than 5 years : 27.0%
: Between 10 and 15 years : 34.5%
 - Occupational Profile : Salaried Executives : 17.0%
: Merchants (Retail/Wholesale/Distribution) : 13.5%
: Skilled Labour : 27.0%
- **BUSINESS & INDUSTRY**
 - Banking & Finance - Currency in circulation is the Indian Rupee (INR).
1 US\$=INR 32, 1 Cdn\$=INR 22 (March 1995)
 - All major Indian banks and several foreign banks.
 - Bangalore Stock Exchange has over 300 listed companies.

Bangalore has attracted many corporate offices and plants. Major companies in some key sectors are:

- Electronics & Telecommunications - Bharat Electronics Ltd., Indian Telephone Industries, BPL Sanyo, Motorola, Datalogic, Fanuc.
- Computer Hardware & Software - Wipro Systems, Hewlett Packard, Texas Instruments, Tata-IBM, Infosys, Digital.
- Engineering - Hindustan Machine Tools, Bharat Fritz Werner, Bharat Earth Movers (Komatsu), Hindustran Aeronautics (British Aerospace).
- Textiles & Garments - Coats Viyella, Levi Strauss, Lee, Arrow.

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- Others
 - Bata (shoes), Indal (Alcan Associate), UB Ltd, Wiltech (Wilkinson).
- Mining
 - Kudremukh Iron Ore Co., Kolar Gold Fields, Indal (Bauxite mining).
- **INFRASTRUCTURE**
 - Real Estate
 - Good availability with many new complexes under construction.
 - Real estate prices lower than in Bombay or Delhi.
 - Inter-City Linkages
 - Air, road or rail links with all major Indian towns and cities. Regular scheduled domestic flights.
 - International passenger flights to Singapore started in February 1995. International cargo terminal in operation.
 - Telecommunications
 - Telephone, Fax and High-speed Data Links available, but inadequate exchange capacity could result in a long waiting period.
 - Power
 - Inadequate power generation leads to scheduled power cuts and blackouts. Stand-by generators necessary.
 - Water
 - Shortages exist in some parts of the city.
 - Industrial Areas
 - Many developed industrial areas in and around Bangalore.
 - Higher Education & Research
 - Large number of educational and research institutions, many of which work closely with industry.
 - Work force
 - Good availability of both blue and white collar workers.
 - Wage & salary levels about 20% less than in Bombay and Delhi.
 - Unionised blue collar workers.
- **MAJOR PROJECTS**
 - Telecom network upgrades.
 - Installation of a mass rapid transit system.
 - Construction of a modern airport.
 - Improvement of the inter and intra city road network.
 - Development of industrial parks and cities.

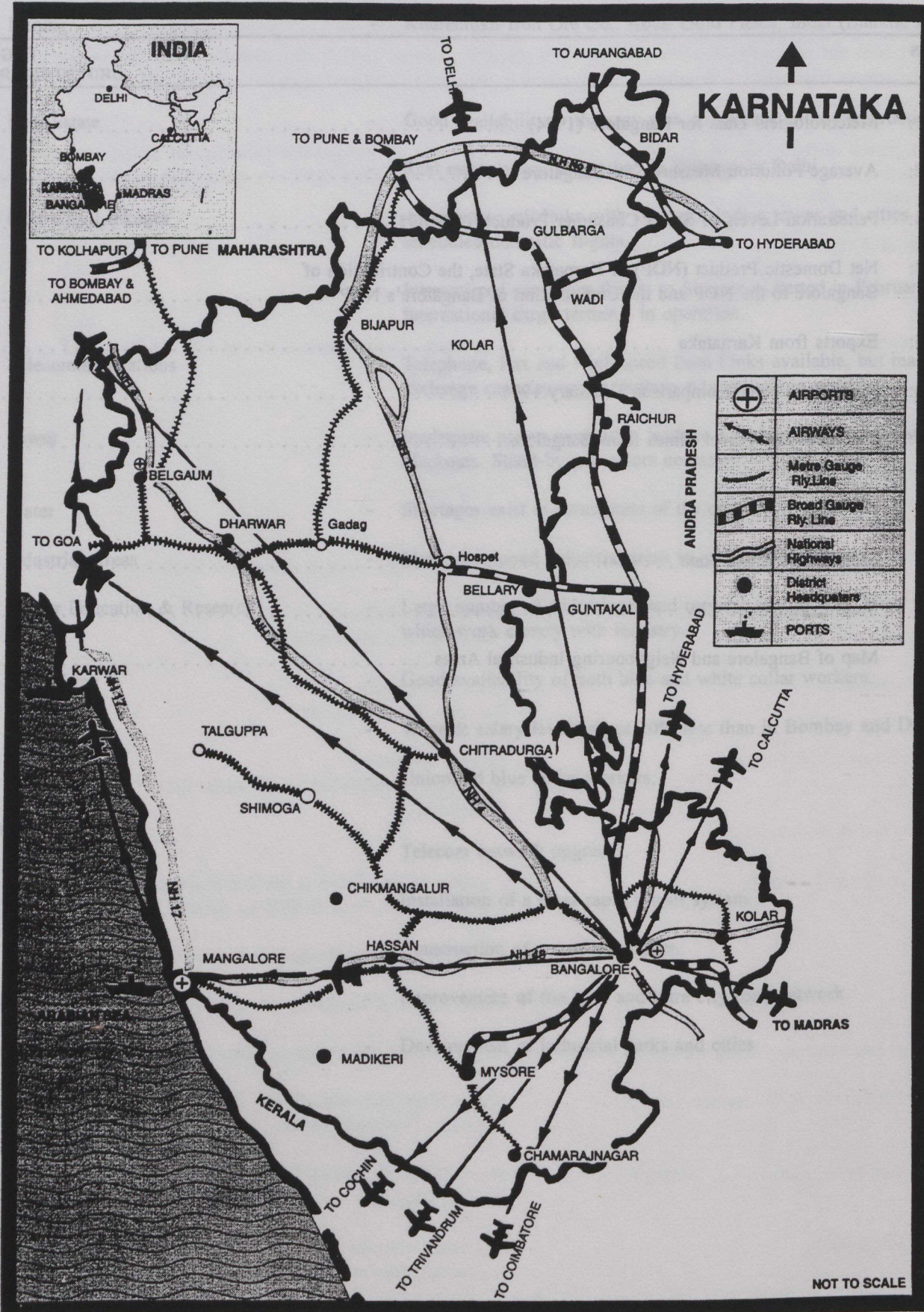
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Map 1 : Map of the State of Karnataka



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Map 2 : Map of Bangalore City



BANGALORE

1. INTRODUCTION

Bangalore, spread over an area of 300 sq.km., is the capital of Karnataka (formerly Mysore State). One of the fastest growing cities in Asia, Bangalore has shot to prominence due to a rush of investment from both India and abroad.

ECONOMIC HISTORY

Kempe Gowda, chieftain of a powerful empire in the 16th century, is associated with the founding of Bangalore. The fort and four pillars he constructed to mark the original boundaries are now lost in the large expanse of the city. Bengaluru (as it was called) changed hands a number of times before the British negotiated with the Maharaja of Mysore to take possession of the city in 1807.

The Maharajas of Mysore State were progressive in their outlook and supported the development of industry, trade and commerce through the requisite investment in infrastructure. Thus, when the British acquired Bangalore, it already had a thriving commercial base.

The first British military station was commissioned in 1808-09. The arrival of the British led to the construction of churches, grand clubs, golf courses and bazaars to cater to their needs and lifestyle. Implementation of the British system of administration also accelerated commercial and industrial development state wide and, in particular, in Bangalore.

When India attained independence in 1947, Mysore State acceded to the Indian Union. When the states were reorganised on a linguistic basis, a new Mysore State was formed which encompassed all Kannada speaking peoples. In 1973, the State of Mysore was renamed Karnataka with Bangalore as its capital.

As the seat of State administration, Bangalore has enjoyed greater infrastructure development and greater commercial and industrial activity. In addition, with its cool and dust free environment, Bangalore has been identified as a suitable site for the development of both the engineering and electronics industries. To give impetus to the growth of these industries, the Indian Government has established large public sector companies such as Indian Telephone Industries Ltd. (ITI), Bharat Electronics Ltd. (BEL), Bharat Heavy Electricals Ltd. (BHEL), Hindustan Machine Tools (HMT), and Hindustan Aeronautics Ltd.(HAL) in and around Bangalore Private sector investment in large, medium and small scale plants, and increased investment in ancillary sectors, followed automatically. Some notable private sector companies include Mysore Kirloskar, MICO Bosch and Asea Brown Bovari.

GEOGRAPHY

Bangalore is located at latitude 12° 8'N and longitude 77° 37'E at an altitude of about 3,000 ft. The city has a pleasant climate through-out the year. Table 1 gives monthly high and low temperatures and monthly recorded rainfall for 1994.

Table 1: Meteorological Data for Bangalore (1994)

Month	Maximum Temperature °C	Minimum Temperature °C	Total Monthly Rainfall (in mm.)
January	30.7	13.6	-
February	31.5	15.3	0.2
March	35.6	14.1	-
April	36.2	19.6	11.0
May	37.0	20.0	78.5
June	31.4	18.8	38.7
July	30.0	18.7	107.5
August	31.4	18.7	58.6
September	31.8	16.6	80.6
October	30.6	18.0	180.6
November	29.0	13.4	25.6
December	29.7	11.9	5.9

Bangalore is known as the "Garden City". Cubbon Park, approximately 300 acres in the heart of the city, was laid out in the mid-nineteenth century and is home to one of India's most spectacular buildings, the Vidhana Soudha, which houses both the Secretariat and the State Legislature. Lalbagh Botanical Gardens (literally meaning "red garden" because of its roses), in the south western part of the city, is 240 acres in area and has one of the largest collections of rare tropical and sub-tropical plants in India. Many other lakes, ponds and gardens enhance the beauty of the city.

The large number of trees and gardens, coupled with a conscious policy of not allowing polluting industries in or around Bangalore, has kept pollution levels relatively low, as indicated in Table 2.

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**Table 2: Average Pollution Measurement
- Bangalore**

(in micro grams/ metres cubed)	Bangalore (Industrial Area)	Pollution Board Standard
SO ₂	29.2	80
No _x	63.6	80
SPM	217.19	360

SO₂ - Sulphur Dioxide, Nox - Oxides of Nitrogen, SPM - Suspended Particle Matter

The relatively clean environment in Bangalore allows for **high tech** industries like electronics and precision engineered products.

DEMOGRAPHICS

Bangalore has grown rapidly over the years. In 1951, it was the 16th largest city in India, but following the 1991 census, it ranked 6th largest with a population of 4.1 million. Bangalore has recorded a growth rate of 70% over the last decade and continues to grow at that rate. By the end of the century, the population is expected to reach 7 million.

This rapid growth occurred as a result of several big, nationally important projects set up by the government which, in turn, attracted considerable private sector investment in the secondary and tertiary sector. The employment opportunities created led to an influx of people in all socio-economic strata from all parts of India. This has given the city a relatively cosmopolitan character.

People of many different religious faiths live in Bangalore. The distribution of population by major religion is as follows:

- Hindus - 83.0%
- Muslims - 11.5%
- Christians 4.5%
- Others - 1.0%

Although Kannada (the official language of the State of Karnataka) is the most widely spoken language, other languages like Tamil, Telugu, Marathi, and Hindi are

also spoken. Many people have a working knowledge of English.

There are an estimated 800,000 households in the city with an average household size of about five.

While the population of Bangalore is lower than that in Madras and Hyderabad, two other southern cities, the socio-economic profile of the people in Bangalore suggests that they are more modern, up-market consumers. Although generally, people in South India are known to be more traditional than people in the western and northern regions, Bangalore seems to be an exception.

The people of Bangalore are considered fun loving, adventurous and quick to adapt to new ways, new ideas and new products. Bangalore boasts more cinemas and pubs than any other city in the country and is often used as a test market for new consumer products.

A comparison across the major cities in India (See Annex for details) reveals that Bangalore has a higher percentage of graduates than Bombay and Madras. Similarly, it has a higher concentration of executives.

With respect to income, a higher percentage of the Bangalore population is in the upper income category (household income of more than INR 4,000 per month) than in Bombay or Madras. This, coupled with a lower cost of living, yields higher disposable incomes and a higher savings rate.

Penetration levels of some consumer products, as shown in Table 3, are indicative of the better lifestyle and purchasing power in Bangalore.

Table 3: Penetration Levels of Select Consumer Products (1990-91)

PRODUCT	BANGALORE	ALL INDIA (URBAN)
Radio/Cassette Player	36.5%	17.0%
VCRs	6.8%	3.4%
Air Conditioners	0.3%	0.6%
Refrigerators	17.7%	14%
Cars	6.5%	2.7%
Washing Machines	4.3%	2.7%
Televisions	65.8%	45%

Source: NRS IV

2. ECONOMIC SCENARIO

In 1992-93, the Net Domestic Product (NDP) of Karnataka reached INR 291 billion, reflecting an annual growth of 6.4% over a ten year period. The State has a per capita income of INR 6,313 (1992-93) which is just above the national average of INR 6,249. Bangalore and its surrounding areas account for about 21% of State NDP as indicated in Table 4, and Bangalore district accounts for nearly one third of the State manufacturing and service sectors.

Table 4: NDP of Karnataka State, the Contribution of Bangalore, and the Composition of Bangalore's NDP.

Sector	1992-93 State NDP- INR billion	Bangalore district's contribution to NDP	Sectoral composition of Bangalore district's NDP
Agriculture, Forestry and Fishing	107.2	5.1%	8.4%
Mining, Manufacturing & Construction	64.5	32.2%	41.0%
Electricity & Water Supply	8.0	28.6%	2.5%
Transport, Communication & Storage	14.8	28.4%	6.1%
Trade & Banking	57.0	31.1%	27.7%
Other	39.8	21.5%	14.3%
Total	291.3	21.0%	100%

Karnataka's contribution to national production is shown in Annex 2. The State's contribution is most significant in the wood products; paper and machinery production sectors.

MINING & INDUSTRY

Mining : Karnataka has abundant deposits of iron ore and the Kudremukh Iron Ore project is one of the biggest mining installations in the country. In addition, Kolar (about 90 km. from Bangalore), is the chief source of gold in India and has one of the oldest and deepest mines in the world. Bauxite and limestone deposits have also helped to develop thriving aluminum and cement industries in the State.

Industry : Karnataka was an Indian pioneer with respect to public sector (100% government owned) and joint sector (51% government owned, balance private investment) projects. As a result, Bangalore has received a disproportionate share of government investment in modern and hi-tech areas like machine tools (Hindustan Machine Tools Ltd.), aeronautics (Hindustan Aeronautics Ltd.), electronics (Bharat Electronics Ltd., Bharat Heavy Electricals Ltd.) and telecommunications (Indian Telephone Industries Ltd.). This has also laid the foundation for a hi-tech industrial base. A brief outline of the public sector companies in Bangalore is presented in Annex 3.

Many large industrial houses also have their head offices in Bangalore. Titan Watches, The UB Group, BPL India, Brooke Bond Lipton India Ltd., Britannia India, Wipro, and MICO Bosch are some of the major companies based in the city. A brief profile of some of these companies is set out in Annex 4 and a list of major foreign collaborations already operating in the State is presented in Annex 5.

Karnataka has over 800 large and medium size businesses, employing close to 300,000 people, which represent an investment of over INR 70 billion. There are also over 150,000 small manufacturing businesses employing 1 million people. Approximately 8% of the country's enterprises are based in Karnataka and Bangalore alone accounts for about 18% of the manufacturing in the State.

The major manufacturing industries are electronics, telecommunications, aeronautics, machine tools, watch making, electrical engineering, software, textiles, steel, aluminum and cement. With the exception of aluminum, steel and cement, the major concentration of manufacturing is in and around Bangalore.

A brief outline of some key industries is presented below:

• ELECTRONICS

Bangalore is referred to as the "High-Tech Capital" of India. There are about 250 factories manufacturing electronic items which produce goods worth approximately INR 15 billion. Nearby Mysore produces about INR 2 billion worth of electronic items and, all together, Bangalore, Mysore and Tumkur (70 km. from Bangalore) produce about 20% of the nation's electronics. Products manufactured range from simple diodes and printed circuit boards (INDAL, an associate of Alcan), to equipment for defense and aerospace applications. The State also produces consumer electronics like television sets and computers.

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• ENGINEERING

The State produces 60% of India's earth moving equipment (Bharat Earth Movers Ltd. (BEML)), 30% of the country's machine tools and virtually 100% of the country's aircraft. This reflects the engineering resources and skills available in the region. Apart from these advanced engineering products, mechanical and quartz wrist watches, automobiles (the Rover Montego car is made in Bangalore) and auto components are also being made in the State.

• TELECOMMUNICATIONS

Until recently, close to 40% of the nation's telephone exchanges were manufactured at ITI Ltd. near Bangalore. Many private companies like BPL and Ericsson make EPABX systems and telephones in Bangalore as well. Hewlett Packard also has plans to make cellular phones at Bangalore.

• *Pharmaceuticals*

Astra - IDL and Smith Kline Beecham are two big pharmaceutical companies based in Bangalore. Astra also has a centre for bio-technology research in the city.

• SOFTWARE

This industry has experienced major growth in recent years and Bangalore is often referred to as the "Silicon Valley" of India, in addition to its other titles. All the major information technology (IT) companies in India have set up operations in Bangalore and a technology park, proposed by a Singapore consortium, should bring in more.

• TEXTILES

Bangalore is a centre for textile and garment exports. Coats Viyella, a leading international apparel manufacturer, has its Indian headquarters at Bangalore. Levi Strauss, Lee and Arrow are also located there. In addition, many small entrepreneurs have 100% export oriented factories in the city and the largest exporter of leather goods in India is based in Bangalore.

• OTHERS

INDAL, an associate of Alcan, has facilities for alumina refining and aluminum smelting in Karnataka. Bata, which is a major presence in the Indian shoe market, also has a manufacturing facility near Bangalore.

Electronics, precision engineering and software are big business in Karnataka. With the opening of the telecommunications sector to private investment, heavy investment is expected in this sector as well.

BANKING & TRADE

The State has a well developed market structure and most products are distributed through existing wholesaler/retailer channels. Retailing, as in most parts of India, is characterised by small, owner managed stores. There are about 270,000 wholesalers/retailers in the State with approximately 30% located in Bangalore.

All major Indian banks have branches in Bangalore. National banks which have their headquarters in the State include Canara Bank, Corporation Bank and the Syndicate Bank. Vysya Bank, one of the largest private sector banks in India, has its headquarters in Bangalore. To cater to foreign investors, international banks such as Hongkong and Shanghai Bank, ANZ Grindlays, Standard Chartered and Deutsche Bank have also opened branches in Bangalore.

Bangalore has a stock exchange with 300 listed companies. Turnover increased to INR 18 billion during 1991-92 and Bangalore is emerging as one of the leading exchanges in the country.

Exports:

Karnataka has traditionally exported coffee, silk and other low value added products. However, in the past decade the export mix has slowly changed and value added exports have increased. In 1992-93, Karnataka exported INR 19 billion worth of products. Table 5 gives a breakdown of some major exports from the State. Based on government incentives for export oriented factories, these numbers are likely to increase.

Table 5: Exports from Karnataka - 1992/93

Item	Exports	
	In INR Million	% Share
Basic Chemicals	369	2.0
Engineering Products	2,436	12.8
Electronics & Computer Software	1,663	8.8
Iron Ore	3,181	16.8
Apparel	5,230	27.6
Leather	1,500	8.0
Coffee	3,709	19.6
Others	823	4.4

The Canadian Government is considering opening a Trade Office in Bangalore to assist Canadians doing business in the region. The U.S. Commerce Department and the British High Commission have established trade promotion offices in the city.

GOVERNMENT INTENT

The State has identified the following areas for priority investment:

- Electronics,
- Telecommunications,
- Informatics,
- Food Processing,
- Garment and Leather Production,
- Pollution Control Equipment,
- Renewable, Non-Conventional Energy,
- Textile Spinning,
- Pharmaceuticals,
- Sericulture, and
- Sugar.

Karnataka has been divided into zones based on the level of infrastructure development and Bangalore region has been designated Zone I. This means that only high-tech and non-polluting industries are allowed (i.e. Electronics, Telecommunications, Informatics, Precision Tools and Garment Finishing). While government incentives are available to investors in under-developed and developing zones (Zones II to IV), there are no incentives for investors in Zone I.

Special government agencies exist to help investors set up in the State including the Karnataka State Industrial Investment & Development Corporation Ltd. (KSIIDC) and the Karnataka State Financial Corporation. Other agencies provide technical support: The Technical Consultancy Services Organization of Karnataka (TECSOK) and The Karnataka State Electronic Development Corporation (KEONICS). The Karnataka Industrial Area Development Board (KIADB) is responsible for the development of industrial areas in the State. The Karnataka Udyog Mitra, of the Department of Industries and Commerce, provides guidance and assistance to investors in obtaining approvals/clearances from various State government departments.

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3. INFRASTRUCTURE

Infrastructure in Bangalore is, in many ways, better than that in Bombay or Delhi, however, it has not kept pace with the city's rapid growth. This is reflected in long waiting lists for telephones and poor public transport. Nevertheless, the State government is aware that infrastructure is vital for rapid economic development and is planning to improve infrastructure in the City, as well as in the State. The current status of various infrastructure and proposed improvements to infrastructure are briefly highlighted below.

REAL ESTATE

Bombay, the undisputed commercial capital of India, has recently witnessed runaway inflation in real estate prices. Delhi, the capital city, has also witnessed rapid growth, heavy congestion and increased real estate prices.

Bangalore, on the other hand, still offers prime real estate at an affordable price in a wide choice of locations. While this has been a major attraction for companies in choosing to invest or expand in the city, it should be noted that land prices are shooting up as a result of demand and there are reports that land values have gone up approximately 24% in the last three months (January to March, 1995).

A comparison of real estate prices in Bombay, Delhi and Bangalore is shown in Table 6. The affordability and availability of real estate favours the City of Bangalore.

In addition to monthly rent, a refundable, interest free deposit is payable when a lease is signed. In Bombay and Delhi the deposit is as much as 24 months rent, while in Bangalore it is only 18 months rent. Brokerage charges in all cities vary between 1 to 2 months rent.

ROADS & VEHICLES

Bangalore has a good network of roads which account for approximately 17% of the city's area. Most are all weather roads and suitable for heavy vehicles.

Of late, the city has experienced traffic congestion as the number of vehicles has increased rapidly. Currently, there are approximately 700,000 vehicles in Bangalore: 70% are motorcycles/scooters and 15% are cars. The number of vehicles is expected to double in the next five to seven years.

TABLE 6: REAL ESTATE PRICE COMPARISONS - JANUARY 1995

	Bangalore	Bombay	Delhi
RESIDENTIAL			
Rental (1,500 sq.ft. Apartment)	INR 5,000 - 10,000	INR 25,000 - 50,000	INR 10,000 - 30,000
Ownership (Rate/sq.ft.)	INR 1,000 - 3,500	INR 4,000 - 20,000	INR 3,500 - 7,000
Distance from Central Business District	3 Km (10-15 min. drive)	15-20 Km (50-90 min. drive)	15 Km (30-45 min. drive)
COMMERCIAL			
Rental (per sq.ft. monthly)	INR 20-40	INR 60-200	INR 60-150
Ownership (rate per sq.ft.)	INR 1,500 - 4,000	INR 10,000 - 30,000	INR 7,500 - 15,000

One reason for the growing number of vehicles is inadequate public transport. The city bus service is infrequent and unreliable, while taxis are not easily available and are expensive and un-metered. Auto-rickshaws are cheaper, and easily available, but are uncomfortable, slow and accident prone.

For airport to city transfer, taxi fares range from INR 100 to INR 150. Taxis can be hired for the day (maximum 80 Km./8 hours) for around INR 450.

The State Government is aware of the traffic problem and has already proposed an elevated light rail transport system (ELRTS). A company has been formed to develop this system which will be built over a ten year period at a cost of INR 42 billion (approximately U.S. \$1.5 billion). The system will consist of six routes, covering 90 Km., built by a consortium of either Indian or international origin on a "Build-Own-Operate-Transfer" (BOOT) basis with a 30 year concession period. Although the number of vehicles will probably continue to increase as Bangalore becomes more affluent, the ELRTS will provide a reliable and convenient alternative and should reduce dependence on private transportation.

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Under a project called the "Mega City Development Programme", the State government also plans to build a truck terminus on the outskirts of Bangalore, construct overpasses, widen important roads and build multi-storey car parks. Work on most of these projects has already commenced.

Bangalore is connected to all major towns and cities in India through a network of national and state highways. National Highway No 4 (NH 4) connects Bangalore with Bombay to the north west and Madras to the east. It takes trucks about 48 hours to reach Bombay and about 10-12 hours to reach Madras. National Highway No 7 (NH 7) connects Bangalore to the tip of south India and the town of Varanasi in the northern state of Uttar Pradesh. National Highway No 48 (NH 48) links Bangalore with the port city of Mangalore. Trucks to Delhi take about seven days while it takes about eight to ten days to reach Calcutta.

Table 7: Distances and Travel Time from Bangalore Airport

Place	Road Distance in Km.	Truck	Air	Train
Bombay	1033	2 days	90 min.	24 hrs.
Delhi	2020	6 days	150 min.	36-42 hrs.
Calcutta	1883	8 days	145 min.	38 hrs.
Madras	340	12 hrs.	45 min.	5-7 hrs.
Mangalore	350	12 hrs.	45 min.	No direct train
Mysore	140	5 hrs.	-	2-3 hrs.

Currently there is one airport on the western periphery of Bangalore. This is a busy airport which handles 117 flights a week and an estimated 1.5 million passengers per year. The city is connected by air to all major Indian cities and all the major domestic airlines operate between Bangalore and Bombay, Delhi, Madras and Calcutta. Connecting flights to many international destinations are available from these four cities.

A bi-weekly international service to Australia, via Singapore, has recently started.

In addition to passenger flights, the airport handles about 1500 tonnes of international cargo a month. The airlines that currently handle international cargo include Lufthansa, Kuwait Airways, Singapore Airlines, Air France and Air India. Weekly international freight services operating from Bangalore are as follows:

- Lufthansa - 2 flights to Frankfurt via U.A.E.
- Kuwait Airway - 3 flights to Kuwait.
- Singapore Airlines - 2 flights to Singapore.
- Air France - 2 flights to Paris via Dubai.
- Air India - 1 flight to Brussels via Dubai.

With the unprecedented increase in both passenger and cargo traffic, the existing Bangalore airport is no longer adequate. To ease this situation, the government plans to upgrade facilities at the existing airport and has signed a deal to develop a U.S. \$500 million international airport outside the city with a private sector consortium (Tata Group, Raytheon and a Singapore consortium).

Mangalore, Mysore, Hubli and Belgaum, four other cities in Karnataka, also have airports.

RAILWAYS

The city comes under the Southern Railway division of Indian Railways and is well connected to all major Indian destinations. There are "super fast" trains available to Bombay, Delhi and Madras.

Rail links from Bangalore consist of both metre gauge and broad gauge lines and this leads to unnecessary transshipment and delay. Conversion to broad gauge tracks has been started, and, once completed, will allow for increased traffic and reduced travelling times. Track conversion has already been completed on the Bangalore-Madras, Bangalore-Bombay and Bangalore-Mysore routes.

PORTS

Bangalore is an inland city, but has access to four large ports: Madras, Mangalore, Bombay and Cochin. Of these, Bombay and Madras are relatively older and are experiencing a strain on capacity. An excellent alternative is the new Mangalore port located in the State of Karnataka, which eliminates many formalities required for inter-state movement of goods. Mangalore Port has six general cargo berths capable of handling 30,000 DWT general cargo ships. Two more general cargo berths are in the offing.

TELECOMMUNICATIONS

Telephone density in Bangalore is 3 per 100 persons. Although this is low compared to Bombay (7.2 per 100) and Delhi (8.4 per 100), the number of telephone lines in the city has doubled in the last decade.

Despite being a manufacturing base for telecommunication products, Bangalore has a large waiting list for new connections. In 1992, there were more than 100,000 applicants on the waiting list, however, there are faster ways to get a new connection including the 'Tat Kaal' (immediate) plan, which is the fastest. Depending on the location, under this plan new connections take from 1 week to 2 months once an official premium of INR 30,000 is paid.

The situation is expected to improve in the next 2 to 3 years as private sector companies begin to participate in basic telecommunication services like cellular, paging and other types of value added services.

In addition to private sector initiatives, the Indian Telecommunications Department is planning an Integrated Services Digital Network (ISDN) which will support telex, fax, videophone, data communication and e-mail applications. The Department is also expanding the number of connections by providing 80,000 new lines in the next year.

Bangalore offers relatively reliable international connections in comparison with other cities in India. The availability of high-speed data link earth stations, satellite linkages and leased data lines allow access to remote global networks and databases as well as the export of software.

POWER

In 1902, Karnataka was the first state in the country to harness hydro-electric energy to generate power. However, over the years, Karnataka has changed from a power surplus state to a power deficit state. In 1993 the supply gap was 20%.

The current installed capacity for power generation in Karnataka is about 3200 MW with a high dependence on hydro-electric power (70%). Bangalore is often faced with scheduled power cuts and blackouts which makes standby generators a necessity.

The present power shortfall is a result of inadequate capacity, slippage in project implementation, inefficient operation of existing plants and high transmission and distribution losses.

Private sector participation in power generation, which was approved under recent Indian economic reforms, should improve the situation. The State government has encouraged private companies, including overseas corporations, to participate.

Recently, Karnataka signed an agreement with Cogentrix for a 1000 MW power project at Mangalore and five more power projects are at an advanced stage of negotiation. Within the next five years, if these power projects are completed, the State expects to have approximately 9000 MW installed capacity. Karnataka will then be more or less self-sufficient with respect to its power requirements.

WATER

The river Cauvery, about 80 Km. from Bangalore, is the chief source of water for the city, but the supply source, pumping capacity and pipelines are currently under strain. This, coupled with an inadequate water distribution system, has resulted in water shortages. Private water is available by truck, graded by usage, and the municipality also supplies potable water.

INDUSTRIAL AREAS

Karnataka State has a number of industrial parks developed under the aegis of the Karnataka Industrial Areas Development Board (KIADB) and the Karnataka State Small Industries Development Corporation (KSSIDC).

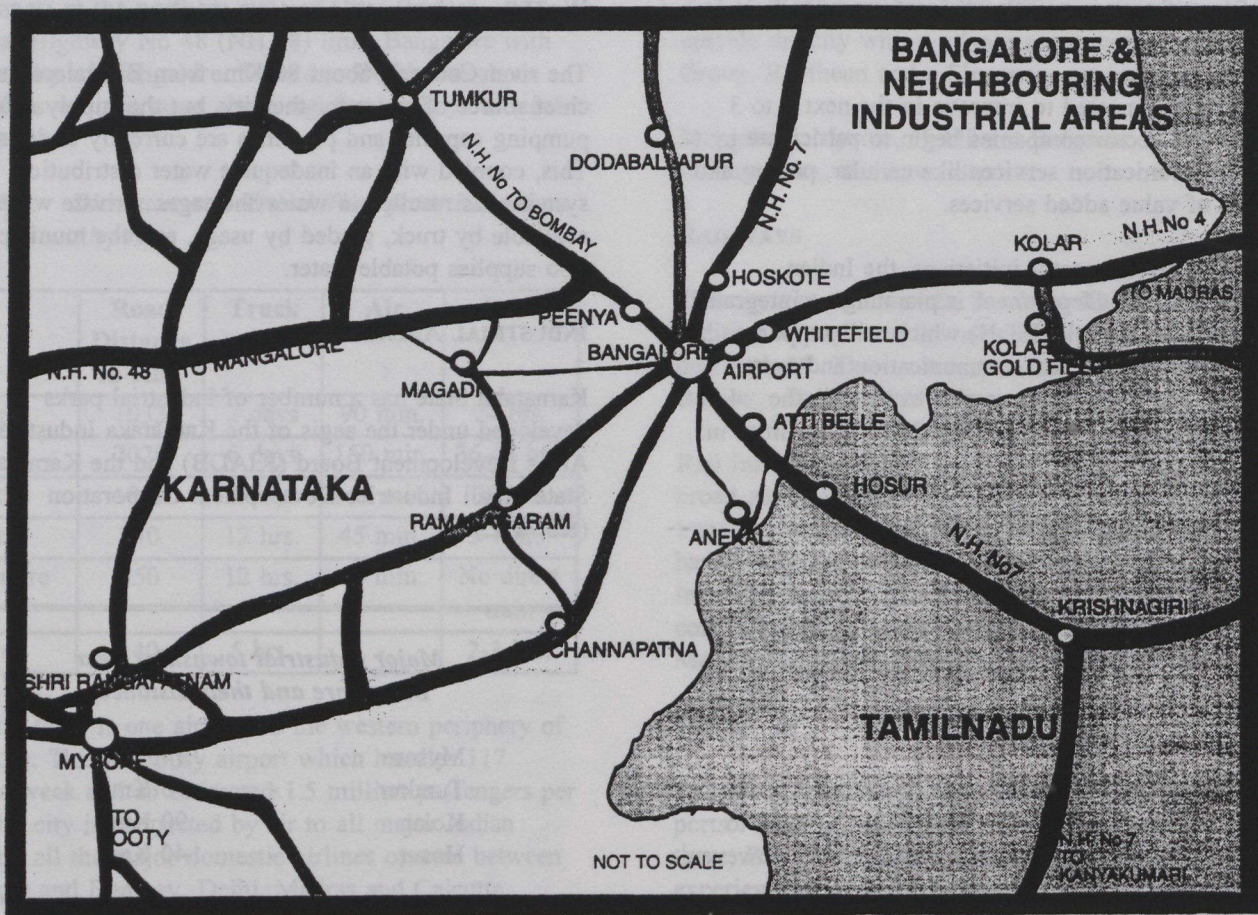
Major industrial townships near Bangalore and their distances

Mysore	-	140 Km.
Tumkur	-	70 Km.
Kolar	-	90 Km.
Hosur	-	40 Km.

In and around Bangalore, there are 10 industrial parks covering an area of 5,000 acres. Peenya industrial area, on the outskirts of Bangalore, is spread over 1,500 acres and is one of the largest in India. In addition, there are approximately 25 industrial areas within 140 Km. (Mysore, Kolar, Tumkur). Map 3 indicates the major industrial areas around Bangalore.

BANGALORE

Map 3 : Map of Bangalore and Neighbouring Industrial Areas



BANGALORE

In addition to these industrial areas, the State Government has created special industrial parks for the electronic hardware and software industries. Two areas, called "Electronics City", have been developed by the State owned electronics corporation (KEONICS) at Bangalore and Mysore, and provide developed infrastructure, training facilities and communication links.

Companies operating in an "Electronics City" can make use of the Software Technology Park (STP) and Electronic Hardware Technology Park (EHTP) schemes of the Department of Electronics under which duty free imports and 100% foreign equity are permitted.

The State of Karnataka is committed to providing developed industrial infrastructure for setting up new plants. It has already initiated action on the following projects:

A third Electronics City at Dharwar, about 90 Km. from Bangalore.

A hi-tech Information Technology Park with integrated facilities in association with a Singapore consortium at Bangalore.

An Export Promotion Industrial Park with comprehensive infrastructure facilities to house hi-tech export plants at Bangalore.

Industrial growth centres at Dharwar, Hassan and Raichur.

Satellite townships around Bangalore and Mysore to ease the pressure on these cities. The industrial townships identified are Ramanagram, Chennapatna, Srirangapatnam and Tumkur.

Any discussion of industrial development around Bangalore cannot ignore Hosur, an industrial town in the adjoining state of Tamil Nadu, only 40 Km. from Bangalore. The Tamil Nadu government has exploited Hosur's proximity in developing a large industrial area which draws on the commercial, residential and social infrastructure of Bangalore.

Hosur has attracted investment from many large industrial houses in India including the Tatas, Birlas and Hindujas. In addition, many multinational companies, including Bata, Reckitt & Colman and Brooke Bond, have invested in this industrial township. The products made at Hosur range from aircraft, trucks and motorcycles to watches and pins. Approximately INR 10 billion is currently invested in Hosur and this amount is expected to double in the next five years.

WORK FORCE

The presence of a number of polytechnic and government sponsored training centres in Bangalore has helped to create a large pool of qualified labour. As in other Indian states, labour in Karnataka is unionized, but the state has one of the best records of industrial dispute settlement in India. (135,000 man days lost, accounting for only 0.40% nationally). Average remuneration for some employment categories are as follows:

Skilled Labour	- INR 25,000 - 48,000/yr.
Secretarial Staff	- INR 60,000 - 80,000/yr.
Software Engineers	- INR 120,000/yr.
Recent MBAs	- INR 160,000/yr.

In 1993, the Consumer Price Index for Bangalore was 248. This is slightly below the national average (252) and compares favourably with other cities: Bombay (273), Madras (258), Delhi (272). The lower cost of living in Bangalore, vis-a-vis other cities, has kept wage levels low. Compensation for managerial personnel in Bangalore is only 80% of that in Delhi and Bombay.

EDUCATION & RESEARCH FACILITIES

Education in India is organised on the "10+2+3" pattern. This means that after 10 years of education the student must specialise in a particular stream for 2 years (pre-degree) after which he/she may pursue a degree course for 3 years. Certain baccalaureates may take 4 to 5 years.

Bangalore has several English language schools. Some well-known convent schools are: Bishop Cotton, Good Shepherd, Sophiya's and St. Joseph's. Although there are no international schools in the city, the facilities and atmosphere at Bishop Cotton and Sophiya's would be comparable. There are no schools where French is the language of instruction.

The city offers a large choice of colleges including 14 engineering schools, 48 general colleges (arts, science and commerce), 4 medical schools and 15 dental colleges. Most of these colleges are run by private trusts, but some are run by the government. With the variety of options available for higher education, many students come from other states and then stay in Bangalore to pursue their professional careers.

Post graduate facilities are available at The Indian Institute of Science, The Indian Institute of Management and The University of Bangalore. The city also has several

polytechnic institutes that specialize in providing trained labour for various industries.

Bangalore has many government sponsored institutes/ organisations that provide excellent facilities for research in a range of technical and engineering areas. They often work in collaboration with industry and are responsible for many new technical developments. Some major research organisations are:

The Indian Institute of Science : This is a top notch research institute which carries out work in the fields of aerospace, communications, electronic, metallurgical and chemical engineering, automation and bio-chemistry.

The Raman Institute : Named after Nobel Laureate Sir C.V Raman, this is a premier research institute in the area of pure sciences.

National Aeronautical Lab (NAL): NAL is dedicated to aircraft research and has many advanced facilities (wind tunnels, etc.). The NAL has developed techniques for computer aided design, testing and development of material applications. Many industries have made use of these facilities.

Indian Space Research Organization (ISRO) : ISRO spearheads applied space research in the country and has designed and built INSAT & IRS (remote sensing) satellites in Bangalore.

Defence Research & Development Organization (DRDO) : A division of the Defense Ministry, this lab has facilities for radar development, gas turbine research and the development of aeronautic systems. The DRDO also conducts research in the area of defense bio-engineering at Bangalore.

Central Machine Tools Institute (CMTI) : CMTI specializes in technical know-how with respect to machine tools and other precision equipment.

Electronic Testing & Development Centre : Facilities for testing high-tech electronics are available at this Centre.

Indian Institute of Astrophysics : This institute undertakes research in astronomy and astrophysics.

Indian Institute of Management : A premier institute of management education and research which conducts executive development programmes and offers research facilities.

Many other institutes located in Bangalore, like the Indian Horticulture Research Institute, the Central Sericultural Technology Development Institute and the National

Institute of Mental Health, carry out research in specialised areas.

<i>Research institutes in Bangalore</i>	
1.	Indian Institute of Science
2.	Indian Institute of Management
3.	Indian Space Research Organisation
4.	National Aeronautical Lab
5.	Defense Research & Development Organisation
6.	Central Machine Tools Institute
7.	Indian Horticultural Research Institute
8.	Raman Institute
9.	Center for Development of Telematics
10.	Center for Development of Advanced Computing
11.	Center for Artificial Intelligence and Robotics
12.	Central Power Research Institute

4. LEISURE & LIFESTYLE

- **Media :** The city has one locally published English daily- the *Deccan Herald*. *The Hindu*, *Indian Express*, *The Times of India* and *Economic Times* are other publications available in English. Other national and international magazines are also available in Bangalore.
- The city has two TV channels run by the government sponsored Doordarshan. In addition, BBC, CNN and other entertainment channels, like STAR TV are available on satellite. Many private cable companies operating in the city provide this service.
- Bangalore has more movie theatres than any other city in India. In addition to local language movies, English movies are released within a few weeks of their release in North America.
- **Clubs :** There are some very old clubs in Bangalore which date back to British times. Some of the most popular are the Bangalore Club, the Century Club and the Cosmopolitan Club. The Golf Club, in the heart of the city, has no restrictions on non-Indian members. The Bangalore Turf Club is available for horse racing enthusiasts.
- **Hotels, Restaurants & Pubs :** Bangalore has excellent restaurants and many places offer Continental or Chinese dishes. Traditional south Indian restaurants are also plentiful. Bangalore has the distinction of being called the "Pub City" because of the large number of taverns which serve as a popular meeting point for both young and old.
- In addition, Bangalore has many first class hotels including the West End Hotel, the Welcomgroup Windsor Manor Sheraton & Towers, The Oberoi, the Taj Residency and The Ashoka. The race is on to build even more hotels to take advantage of an inflow of business people. Hotel Leela venture has an exclusive arrangement with the Four Seasons group of Toronto and has announced plans to build a 5 Star Hotel in Bangalore. In addition to accommodation for travellers, these hotels offer sports, swimming and fitness centre facilities to residents of Bangalore. There is also a host of two and three star hotels in the city.
- **Shopping :** Bangalore has many medium sized grocery and garment stores in addition to several handicraft and art emporiums. The Big Kids Kemp, reputed to be the largest garment store in India, has a range of clothing for the entire family. Department stores such as Nilgiri's and Spencers stock a wide range of groceries and personal care items. Gangarams, R & B, Higgin Bothams and Fountainhead offer the latest books from around the world.
- **Outings :** Weekend trips are popular in Bangalore as shorter commuting times allow for more time with family and friends. At Belur (220 Km. from Bangalore) and Halebid (240 Km.), sculptures of the ancient Hoysalas Dynasty can be seen. The picturesque Nilgiri mountains are about an 8 hour drive from Bangalore. Mysore (135 Km.), known as "Sandalwood City" and Srirangapatnam (16 Km. from Mysore), the ancient capital of Hyder Ah and Tipu Sultan, are approximately 3 hours by train from Bangalore and offer many historical attractions. For leisure holidays, Ooty (297 Km.), Wellington and Coonoor, hill stations on the Nilgiris river, have many hotels and facilities and Coorg, another hill area, is just a few hours drive away. Wildlife sanctuaries at Mudumalai (230 Km.) and Bandipur (210 Km.) offer an excellent chance to sight elephants, tigers, leopards, deer and buffaloes in the wild. Sanctuaries in Bangalore and Mysore region attract over 200 species.
- **Churches :** Bangalore has a large number of churches. The grand St. Mary's Basilica at Shivaji Nagar was built in 1882 in the Gothic style. It has an impressive tower and gothic style arches. St. Mark's Cathedral is noted for it's intricate wood work and an imposing central dome. St. Joseph's Church has a cross-shaped ground plan and is the only church in Bangalore with a crypt.

5. SUMMARY AND RECOMMENDATIONS

Foreign and Indian companies interested in gaining access to the Indian market can no longer afford to ignore Bangalore when selecting a base for operations. This is particularly true for companies in the high-tech sector or those able to take advantage of Karnataka's undertaking to modernize and expand its infrastructure.

A pleasant climate, easy accessibility, low real estate prices, and the availability of cheap, high quality labour, combined with relatively good industrial and commercial infrastructure and government incentives for investors, have made Bangalore an attractive location for companies interested in servicing the Indian market. Already a national export base for electronics, telecommunication equipment, informatics, clothing and precision engineering products, local resources also offer opportunities in food processing, textile spinning, sugar, sericulture, horticulture and leather goods.

Bangalore also offers opportunities for private companies to participate in the development of its infrastructure. The rapid growth envisaged will require:

- Improved telecommunication networks;
- Creation of a mass rapid transit system;
- Construction of an international airport;
- Improvement of inter and intra city roads;
- Development of industrial parks and cities;
- Enhanced water supply, sewage treatment and disposal; and
- Development of tourism infrastructure.

Bangalore, the "High-Tech Capital" of India, should be seriously considered as a location for Canadian companies wishing to capitalize on the flourishing business opportunities in India and contribute to the sustainable economic development of the country.

BANGALORE

6. USEFUL ADDRESSES AND CONTACTS (Bangalore Area Code is 080)

POPULAR 5 STAR HOTELS

The Oberoi

37-39, M G Road
Bangalore - 560001
Phone : 558-5858 • Fax : 558-5960

The Taj Residency

41/3 M G Road
Bangalore - 560001
Phone : 558-4444 • Fax: 558-4748

Windsor Manor

Sheraton & Towers
25 Sankey Road
Bangalore - 560052
Phone : 226-9898 • Fax : 226-4941

West End Hotel

Race Course Road
Bangalore - 560001
Phone : 226-9281 • Fax : 220-0010

Hotel Ashoka

Kumara Krupa Road
High Grounds
Bangalore - 560001
Phone: 226-9462 • Fax: 226-0033

CHAMBERS OF COMMERCE, TRADE & INDUSTRY ORGANISATIONS

**Federation of Karnataka
Chambers of Commerce &
Industry (FKCCI)**

P B No. 9996
K G Road
Bangalore-560 009
Phone : 226-2355/56, 226-2157
Fax : 226-1826

CLUBS & ASSOCIATIONS

Bangalore Club

FM Cariappa Road
Bangalore - 560025
Phone : 221-1374/221-2418

Bangalore Turf Club Ltd.

Race Course Road
Bangalore - 560001
Phone : 226-2391

Century Club

Cubbon Park
Bangalore - 560009
Phone : 221-1633

Bangalore Golf Club

High Grounds,
Sankey Road
Bangalore - 560001
Phone : 226-2391

**Greater Mysore Chamber of
Industry**

Sherieff Chambers, 3rd Floor
14, Cunningham Road
Bangalore-560-052
Phone: 226-1475 • Fax: 228-1054

**Indo-American Chamber of
Commerce**

205, 2nd Floor, HVS Court
Cunningham Road
Bangalore-560-052
Phone: 220-3366 • Fax: 225-5188

TRAVEL AGENCIES

Cox & Kings (India) Ltd.

22 B, MH Complex
Bangalore - 560027
Phone 223-9377/223-8911
Fax : 223-8911

Thomas Cook (India) Ltd.

70, M.G. Road
Bangalore - 560001
Phone: 558-7066 • Fax: 558-5664

BOOKSHOPS

Higginbothams Ltd.

68, M.G. Road,
Bangalore - 560001
Phone : 558-6574

Gangarams Book Bureau

72, M.G. Road
Bangalore - 560001
Phone : 558-6189/558-8015

R&B Bookshop/Cafe

Windsor Castle, 3 Ulsoor Rd
Bangalore - 560042
Phone: 568987

**Confederation of Indian
Industries**

604 Eastern Block
Rear Wing, Manipal Centre
Dickenson Road, Bangalore-560 045
Phone: 558-7425 • Fax: 558-6106

**Indo-German Chamber of
Commerce**

Shah Sultan, 4th Floor
Cunningham Road
Bangalore-560 052
Phone: 226-5650 • Fax: 220-3797

BANGALORE

Indo-Italian Chamber of Commerce & Industry

FKCCI Building
KG Road
Bangalore - 560009
Phone : 226-2355/56
Fax : 225-1826

US Foreign Commercial Service

Sunrise Chambers, 2nd Floor
Ulsoor Road
Bangalore - 560042
Phone : 558-1452
Fax : 558-3680

British Trade Office

37/7 Cunningham Road
Bangalore - 560052
Phone : 220-4844
Fax : 220-4855

GOVERNMENT BODIES, FINANCIAL INSTITUTIONS AND BANKS

Department of Industries and Commerce

14/3A, Nrupathunga Road
Rastrothana Parishat Bhavan
Bangalore - 560002
Phone : 221-2503
Fax : 221-1018

Karnataka State Industrial Investment and Development Corporation Ltd.

36, Cunningham Road
Bangalore - 560052
Phone : 225-8609
Fax : 225-5740

Reserve Bank of India

10/3/8, Nrupathunga Road
Bangalore - 560001
Phone : 221-5020
Fax : 221-0185

Industrial Development

Bank of India
2, Residency Road
Bangalore - 560025
Phone : 221-2869

Industrial Financial Corporation of India

3, Cubbonpet Main Road
N.R. Square
Bangalore - 560002
Phone : 221-1623

Industrial Credit and Investment Corporation of India Ltd.

23, Hall Road
Richmond Town
Bangalore - 560005
Phone : 558-1239

Export - Import Bank of India

Ramanashree Arcade
18, M.G. Road
Bangalore - 560001
Phone : 5589101
Fax : 558-9107

Karnataka State Financial Corporation

25, M.G. Road
Bangalore - 560001
Phone : 558-4857
Fax : 558-4243

Karnataka Industrial Areas Development Board

2nd floor, Rastrothana
Parishat Bhavan
Nrupathunga Road
Bangalore - 560002
Phone : 221-1066
Fax : 221-7702

Karnataka State Electronics Development Corporation Ltd

29/1 Race Course Road
Bangalore, 560001
Phone : 225-7201
Fax : 220-0165

Export Credit Gaurantee Corporation of India Ltd.

26, M.G. Road
Bangalore, 560001
Phone : 558-9779
Fax : 558-9775

ANZ Grindlays Bank

Raheja Towers
26/27, MG. Road
Bangalore, 560001
Phone : 558-7684/558-7655
Fax : 558-5569

Hong Kong & Shanghai Bank

Manipal Center
Ground Floor
Dickenson Road
Bangalore, 560042
Phone : 558-5553/558-5444
Fax : 558-4411

Standard Chartered Bank

Raheja Towers
1st Floor, West Wing
138, M.G. Road
Bangalore, 560001

Deutsche Bank

Raheja Towers
26/27 M.G. Road
Bangalore, 560001
Phone : 559-4190/559-4195
Fax : 559-4388

BANGALORE

ACCOUNTING AND CONSULTANCY FIRMS

Coopers & Lybrand
508, Barton Center
84, M.G. Road
Bangalore, 560001
Phone : 558-5009/558-3225
Fax : 559-4401

Lovelock & Lewes
307, Copper Arch
83/1, Infantry Road
Bangalore, 560001
Phone : 559-1941
Fax : 559-3792

Price Waterhouse
St. Patricks Complex
21, Museum Road
Bangalore, 560025
Phone : 558-7231/558-7237
Fax : 558-8751

Arthur Andersen
C/o Windsor Manor Sheraton
25 Sankey Road
Bangalore, 5600052
Phone: 226-9898
Fax : 226-9893

A.F. Ferguson & Co.
22, Palace Road
Bangalore, 560052
Phone : 226-4969
Fax : 220-5101

KPMG Peat Marwick
5th Floor, Sharif Chambers
14, Cunningham Road
Bangalore, 560052
Phone: 220-4600
Fax : 220-4300

AIRLINES

Air India
Unity Building
J.C. Road
Bangalore, 560002
Phone : 227-7747
Fax : 227-3300

Lufthansa
44/2 Dickenson road
Bangalore, 560042
Phone : 558-8138

Air France
Sunrise Chambers
Ulsoor Road
Bangalore, 560042
Phone : 558-7258
Fax : 558-7258

British Airways
7, St. Marks Road
Bangalore, 560001
Phone : 221-7644
Fax : 221-7644

Singapore Airlines
Le Parc Richmonde
Richmond Road
Bangalore, 560025
Phone : 221-2822
Fax : 221-5340

Air Canada Cargo
GSA: Global Aviation Services
C-4, Devatha Plaza,
Residency Road
Bangalore, 560025
Phone : 227-2575
Fax : 221-8081

HOSPITALS

Apollo Mallya Hospital
VM Road
Near Kanteerave Stadium
Bangalore
Phone : 221-7979

Manipal Hospital
98 Rustom Bagh
Airport Road
Bangalore, 560017
Phone : 556-6646

Church of South India Hospital
20 Col Hill Road
Bangalore, 560051
Phone : 332-0198

*In case of Emergency
please contact:*

Consulate of Canada
41/42, Maker Chambers VI
Jamnalal Bajaj Marg,
Nariman Point,
Bombay 400 021
Phone : (022) 2876027/28
Fax : (022) 2875514

**Canadian High
Commission**
P.O. Box 5208, Shantipath,
Chanakyapuri,
New Delhi 110 021
Phone (011) 6876500
Fax : (011) 6876579

7. CANADIAN GOVERNMENT OFFICES

IN CANADA :

DEPARTMENT OF FOREIGN AFFAIRS AND INTERNATIONAL TRADE CANADA

South Asia Division (PSA)
Lester B. Pearson Building
125 Sussex Drive
Ottawa, Ontario
Canada K1A 0G2
Phone: (613) 996 5903
Fax : (613) 996 5897

IN INDIA :

CANADIAN HIGH COMMISSION

P.O. Box 5208,
Shantipath,
Chanakyapuri,
New Delhi 110021
Phone: (011) 687 6500
Fax : (011) 687 5387

CONSULATE OF CANADA

4th Floor, 41/42 Maker Chambers VI
Jamnalal Bajaj Marg,
Nariman Point
Bombay 400021
Phone: (022) 287 6027/28/29/30
Fax : (022) 287-5514

(Please note that Bombay Consulate is responsible for trade and consular inquiries for Bangalore)

ANNEXES

Annex 1
PROFILE OF CHIEF WAGE EARNERS IN SOME INDIAN CITIES
(ALL FIGURES ARE IN PERCENTAGES)

Parameter	Bangalore	Bombay	Delhi	Madras
Education				
Illiterate	11.7	9.3	13.3	9.3
Less than 10 years	26.8	35.1	24.9	41.5
Between 10 and 15 years	34.5	36.2	29.9	31.9
More than 15 years	27.0	17.4	31.9	17.4
Occupation				
Executives	17.0	12.2	17.0	12.4
Merchants	13.5	12.2	20.8	12.5
Clerical	18.9	20.1	20.1	17.4
Skilled Workers	27.0	29.8	25.0	23.6
Unskilled Workers	15.9	20.4	13.1	28.0
Retired	7.7	5.4	4.1	8.1
Income/month				
Up to INR 500	3.7	2.1	1.0	16.8
INR 500 - INR 1,000	18.7	17.7	13.5	30.0
INR 1,001 - INR 2,000	26.6	32.2	31.5	27.7
INR 2,001 - INR 4,000	26.9	26.3	32.1	15.6
INR 4,001 +	14.1	11.2	20.2	6.0

Annex 2

INDUSTRY PERFORMANCE IN THE STATE OF KARNATAKA
(1992-93)

Product Category	Value of Output (in INR Million)	Percentage of Indian Output
Food Products	17,850	5.4
Beverages	3,720	8.6
Textiles	7,240	2.9
Wood and Wood Products	870	10.0
Paper Printing	5,660	9.0
Leather	1,100	4.8
Rubber	3,130	1.3
Chemicals	6,180	2.1
Non Metallic Minerals	5,250	6.7
Basic Metals & Alloys	10,440	3.6
Metal Products	2,200	4.4
Electrical & Non Electrical Machinery	21,850	8.1
Transport	5,200	4.0
Others	2,040	10.0

Annex 3

PUBLIC SECTOR COMPANIES BASED IN BANGALORE

BHARAT ELECTRONICS LTD. (BEL)

A public sector undertaking under the Ministry of Defence, BEL is currently the country's premier electronic manufacturing organisation with 9 facilities in 6 Indian states. The company makes VHF, UHF, MW and satellite communications equipment, broadcast equipment, radar, simulators and components at its Bangalore facilities. BEL services both the government and private sectors and employs about 19,000 people across the country. In 1994, BEL achieved sales of INR 8.58 billion. The head office is located on Race Course Road in Bangalore.

BHARAT EARTH MOVERS LTD. (BEML)

BEML was incorporated in 1964 by the Government of India as a public sector undertaking under the Ministry of Defence. It was formed to make heavy earth moving equipment, railway coaches, heavy duty trucks, trailers, locomotives, tracking equipment and overhead inspection cars. BEML has a technical partnership with Komatsu of Japan. The company had a turnover of INR 9.02 billion in 1994 and employs about 17,000 people. BEML has an R&D complex at Kolar Gold Fields, 90 km from Bangalore. The registered office is on J.C. Road.

BHARAT HEAVY ELECTRICALS LTD. (BHEL)

BHEL, with 75,000 employees in India, is one of the largest employers in the country. In addition to other heavy equipment, BHEL makes automated electronic parts for steam turbines and components for generators at its facilities in Bangalore. In 1994, turnover was INR 35.5 billion.

HINDUSTAN AERONAUTICS LTD. (HAL)

An Indian pioneer in the manufacture of aircraft, HAL builds and maintains most of India's fighter planes. The company is in the process of introducing an advanced light helicopter designed in-house. HAL's revenues in 1993 exceeded INR 14 billion and it employs about 40,000 people in India. The head office is on Cubbon Road in Bangalore.

INDIAN TELEPHONE INDUSTRIES LTD. (ITI)

ITI was the first public sector company in India, incorporated in 1950 to manufacture telephone switching equipment, and has manufacturing facilities throughout India. In Bangalore, ITI manufactures electronic switching equipment, telephones and defence equipment and

employs approximately 30,000 people. In 1994, company revenues were INR 15.2 billion. ITI's head office is located at Margrath Road in Bangalore.

HINDUSTAN MACHINE TOOLS LTD. (HMT)

HMT was established in 1953 to manufacture capital equipment. The company started manufacturing machine tools and later entered the watch market. Currently, HMT is the number two watch brand in the country. HMT employs about 25,000 people at its various establishments across the country. In 1993, HMT generated sales of INR 7.5 billion. The head office is located on Cunningham Road.

Annex 4

PRIVATE SECTOR COMPANIES BASED IN BANGALORE

BPL GROUP

BPL is a household name in Indian consumer electronics. BPL's revenues were INR 10.1 billion in 1992. The company's products range from compact stereos to frost free refrigerators. The BPL Group also manufactures medical equipment, power relays and communication and data transmission equipment. The corporate office is located on Church Street in Bangalore.

BRITANNIA INDUSTRIES

The market leader in biscuits (cookies, breads and cakes), Britannia has been in India for over 75 years with annual revenues of approximately INR 4.4 billion in 1994. Britannia Industries, in active collaboration with Groupe Danone of France, plans to introduce new product lines and modernize its plants. The company's corporate office is on Airport Road, Bangalore.

BROOKE BOND LIPTON INDIA LTD. (BBLIL)

Part of the Unilever worldwide group, BBLIL produces packaged tea, coffee, vegetable fat, squashes and jams. In 1994, company revenue was INR 13.2 billion, making it one of the largest multinational companies in India. BBLIL has a corporate office and training centre at Brookefields in Bangalore.

COATS VIYELLA

Manufacturers of Louis Phillippe and Van Heusen brand shirts, Coats Viyella is a subsidiary of one of the world's largest textile companies. The company has a garment manufacturing facility near Bangalore while its other facilities are spread throughout India. The company recorded a turnover of INR 6.85 billion in 1994. The head office is located on Old Madras Road.

TITAN INDUSTRIES

A new entrant in the Indian watch market, Titan has quickly gained a 60% market share in India for quartz analog watches. In 1994, Titan sold about 2.57 million watches, amounting to INR 2.26 billion, through its network of 4,000 dealers. It has a state of the art watch manufacturing unit at Hosur which employs close to 2,000 people. Titan leads in introducing new model designs and styles and intends to enter the jewellery watch segment. The company has set up a new production facility for jewellery products at Hosur. Titan currently exports INR 60 million worth of watches to countries in the Middle

East and it plans to export to the U.K., Singapore and Malaysia shortly. Titan's corporate office at Bangalore is at the Golden Enclave, Airport Road.

UB GROUP

The UB Group's primary product is alcoholic beverages, but it has other divisions in the petroleum, pharmaceutical and fertilizer industries. With respect to alcoholic beverages, UB Group is the Indian market leader with a 40% share of the beer market and a 38% share of the spirits market. In 1994, UB Group had a turnover of INR 30 billion worldwide and has recently tied up with United Distillers to market brands like Johnnie Walker, Vat 69 and Campari in India. The UB Group has its corporate office at Vittal Mallya Road, Bangalore.

WIPRO GROUP

WIPRO is a diversified group in the consumer goods, information technology, healthcare, lighting and engineering sectors. Group revenues touched INR 6.11 billion in 1994. Wipro Infotech is also the second largest computer company in India, manufacturing personal computers, workstations and mainframes. Most of the computers are made near Bangalore or Mysore. WIPRO Group has recently decided to move to Airport Road in Bangalore from its headquarters in Bombay.

Annex 5

PROFILE OF SOME FOREIGN COLLABORATIONS IN KARNATAKA
(Technical and Financial)

Indian Company	Foreign Company	Country	Product
AEG NGEF Ltd.	AEG-EIO Herm	Germany	Transmission Equipment
AMCO Yuasa Batteries Ltd.	Yuasa Battery Co. Ltd.	Japan	Automotive Storage Batteries
Aeronautical Development Establishment	General Electric Co.	USA	Engines for Light Combat Aircraft
Arvind Clothing Co.	Peabody	USA	Garments
Asea Brown Boveri Ltd.	Asea AB	Sweden	Electrical Equipment
Astra IDI Ltd.	Astra Pharmaceuticals AB	Sweden	Bulk Drugs
Automotive Axles Ltd.	Rockwell International Corporation	USA	Axles, Air Brakes and Axle Assemblies
BHEL	Kraft Werk Union	Germany	Electronic Automation for Steam Turbines
	Siemens AG	Germany	Power Equipment
	General Electric Co.	USA	Variable Speed AC Drive Controls
	Asea AB	Sweden	HVDC Equipment
	Brown Boveri Corporation	Switzerland	Powerplant and Industrial Automation, DDC Systems
	NGK Insulators Ltd.	Japan	High Tension & Low Tension Insulators, Bushings, etc.
BPL Sanyo (P) Ltd.	Sanyo Electric Corporation	Japan	Consumer Electronics

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Annex 5 (Contd.)

Indian Company	Foreign Company	Country	Product
Bharat Earth Movers Ltd.	Komatsu Ltd.	Japan	Heavy Duty Earth Moving Equipment
Bharat Electronics Ltd.	Nippon Electric Corporation	Japan	TV Picture Tubes
	RCA Corporation	USA	Integrated Circuits
	Corning France SA	France	TV Picture Tubes
	Thorn EMI Electronics Ltd.	UK	Mortar Locating Radar
	Robert Bosch	Germany	TV Cameras and Colour Monitors
Birla 3M Ltd.	3M	USA	Connectors, Pressure Sensitive Coated Tapes
Bharat Fritz Werner Ltd.	Fritz Werner	Germany	Machine Tools
Cargill Seeds (India)	Cargill	USA	Seeds
Coats Viyella	Coats Viyella PLC	UK	Garments
Data Logic (India) Pvt. Ltd.	Data Logic Spa	Italy	Optic Switches
Digital Equipment India	Digital Equipment Corporation	USA	Software
Eskayef Ltd.	ISF Spa	Italy	Pencillin - G
HMT Ltd.	Fritz Werner AG	Germany	Milling Machines
	Citizen Watch Co.	Japan	Wrist Watches
	Regie Nationale Des Usines Renault	France	Special Purpose Machine Tools
	Jones & Lamson H. Ernaultsomua SA	USA France	Automatic Lathes
HCL - HP	Hewlett Packard	USA	Hardware & Software
Hindustan Aeronautics Ltd.	British Aerospace	UK	Aircraft

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Annex 5 (Contd.)

Indian Company	Foreign Company	Country	Product
ITC Hotels Ltd.	Sheraton International Inc.	USA	Hotel Management
Indian Telephone Industries Ltd.	CIT Alcatel	France	Digital Trunk Automatic Exchange Equipment
	Jeumont Schneider	France	EPABX/EPAX and Allied Equipment
	Alcatel Thomson (ATFH)	France	Digital Microwave Equipment
Indo Nissin Foods Ltd.	Itochu and Co. Ltd.	Japan	Instant Processed Food
International Instruments Ltd.	Nippon Seiki Ltd.	Japan	
	Nippon Denso Co. Ltd.	Japan	Dash Board Instruments
Karnataka Rock Drill P. Ltd.	Teledyne Canada Ltd.	Canada	Mining Equipment
Kirloskar Electric Co. Ltd.	Brush Electric Engg. Co. Ltd.	UK	Electric Motors
	Toshiba Corporation	Japan	Power Systems
Krone Communication	Ericsson	Sweden	Telephone Equipment
Levi Strauss (India)	Levi Strauss Co.	USA	Garments
Motorola India	Motorola	USA	Computer Software & Hardware
Mandya National Paper Mills Ltd.	Parsons and Whitmore	Canada	Paper
Mini Circuits P. Ltd.	Filtran Micro Circuits Inc.	Canada	Hybrid Micro Circuits
Motor Industries Co. Ltd. (MICO)	Robert Bosch GmbH	Germany	Auto Parts
PSI Data Systems Ltd.	Bull SA	France	Main Frame Computers
SAN Engineering & Locomotive Co.	J.M. Voith	Germany	Equipment for Locomotives

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Annex 5 (Contd.)

Indian Company	Foreign Company	Country	Product
Sipani Automobiles	Reliant Motors Co.	UK	Power Packs for Automobiles
	Rover	UK	Cars
Swede India	Ericsson	Sweden	Telephone Equipment
TVS Electronics Ltd.	Citizen Watch Company Ltd.	Japan	Dot Matrix Printers
Tata Elxsi (India) Ltd.	Tata Elxsi (PTE)	Singapore	Multiprocessor Computer Systems and Components
TISL	IBM	USA	Computer Software
Texas Instruments (India) P. Ltd.	Texas Instruments Inc.	USA	VLSI Design Software
UB Ltd.	Schwarz Laboratories Inc.	USA	Beer
VST Tillers Tractors Ltd.	Mitsubishi Group	Japan	Power Tillers
Widia (India) Ltd.	Meturit AG	Switzerland	Hard Metal Products, Tungsten Carbide Cores and Noses
Wiltech	Wilkinson Sword Group Ltd.	UK	Blades and Shaving Equipment
Wipro Infotech Ltd.	Seiko Epson Corporation	Japan	Computer Peripherals
	Sun Micro Systems	USA	Workstations

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