

7.0 CASE STUDY: BANGALORE

7.1 Background

Bangalore has ancient roots with historical evidence showing "Bengalooru" inscribed in a 9th century temple inscription in the village of Begur.

Moving closer to modern times, under the British influence, Bangalore bloomed with modern facilities like the railways, telegraphs, postal and police departments. Today Bangalore is known as the Silicon Valley of India with Businessweek, Newsweek and ZDNet citing it as a successful technology region with a population of over 6 million people (up from 4 million in 1991). The United Nations Human Development report of 2001 classified Bangalore as a global hub ranking it at number 4. It is India's 5th largest city and the fastest growing city in Asia.

Technology giant Texas Instruments and local entrepreneurs discovered Bangalore's high tech potential in the early 80s. It is now home to more than 928 high tech companies including homegrown giants such as Wipro and Infosys. Chart 4 shows a breakdown of the companies classified by type of activity. Multinationals companies located in the Karnataka state of which Bangalore is the capital include big names such as IBM, Intel, Cisco, Sun Siemens, British Aerospace, British Telecom, and Ericsson.

In the year 2001 Bangalore has seen a cumulative investment of around USD1.3 Billion in the software industry with software professionals numbering around 80,000. Exports have risen from a mere USD1.2 Million in 1991-92 to USD1.5 Billion in 2000-01.

Case Study: Bangalore

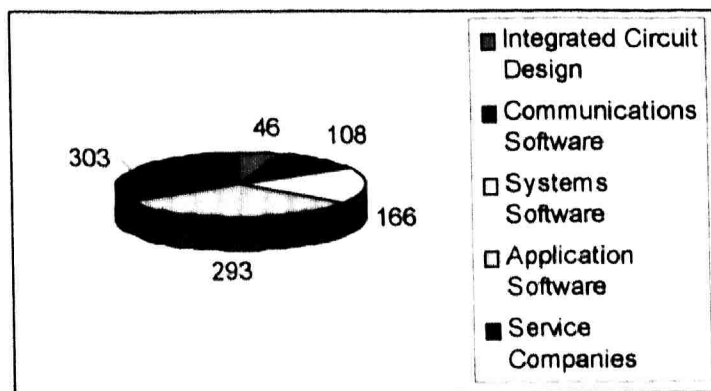


Chart 4: Industry Composition by Type of Activity
(Source: Departmentt of IT Government of Karnataka)

7.2 Success Factors

Major Higher Education and Research Institutions

In order to have a successful technological region, there is a need to produce adequate numbers of technically skilled workforce. Karnataka state where Bangalore resides, has 5% of India's population but produces 15% of India's college graduates with the state being the first to encourage the growth of private colleges half a century ago. Today only 2 out of 82 institutions of higher education in the state are public. Bangalore is home to 24 engineering colleges (1998-99), 6 medical colleges and 4 Universities. Among the more famous is the Indian Institute of Science (IIS) and the Indian Institute of Information Technology Bangalore (IITB).

The IIS is one of India's oldest (founded in 1904 by the Jamsetji Tata the foremost Indian industrialist of his time) and premiere research institutions conducting various forms of basic and applied research with more than 2000 active researchers. In a year, IIS publishes well over 1,000 research papers and produces over 100 PhDs covering a wide range of areas. Noteworthy linkages with industry include IBM, Microsoft, Hewlett Packard, Nokia and General Motors whom have endowed chairs, laboratories and supported projects. IIS has the largest computing facility

of any academic institution in India and also boast of having CV Raman, India's Nobel laureate as a former director.

IITB was founded to help maintain Bangalore's competitiveness as a technology centre. It is situated in the International Technology Park with 90 IT companies right on its campus with around 3000 engineers working in the vicinity ensuring close university-industry collaboration. It has labs funded by Adobe, Apple, Novell, Cisco, Computer Associates, SAP, Ramco, IBM, Oracle, Informix, Microsoft, Sun and Compaq. Internships are organised for students with partner companies to work on projects identified by faculty and industry. The Indian Institute of Management is also located in Bangalore contributing to a highly skilled management talent pool to the region.

Bangalore is able to attract technically skilled workers from around India. Currently India trains 68,000 professionals a year and has around 280,000 people working in the software and services sector, which is the second largest, IT workforce after the United States. Indian Universities also make up 5 of the top 10 science and technology schools in Asia according to Asiaweek's 2000 survey.

Aside from the IIS, Bangalore also boast having some other technology R&D organisations with the most notable being Defence Research and Development Organisation (DRDO), Indian Space Research Organization (ISRO) Satellite Centre and ISRO Telemetry Tracking and Command Network (ISTRAC), organisations which have taken India into the space age. A R&D culture is important as it helps encourage innovation and the formation of potentially high growth technology start-ups.

Infrastructure

Bangalore is served by fibre optics and digital microwaves for its data communications transmission network. Although the telephone penetration rate remains low with 608,103 telephone connections as on 31

Case Study: Bangalore

March 2000, the technology districts are served by the latest communications services which include leased circuits of 64Kbps or multiples thereof, 2Mbps, ISDN and Internet services. The domestic network is connected to international gateways and from there to various carriers in the US, Europe and the Pacific.

Venture Capital

In the year 2000, Bangalore attracted USD275 Million in venture capital financing which is expected to continue rising.

Local Anchor Megasuccessful Companies

Bangalore has 2 major local success stories in Infosys and Wipro. Infosys earned revenues of around USD500 Million in the financial year ending 2002 with employees numbering around 10,000 and is listed on the NASDAQ. It has offices around the world in the US, Argentina, Australia, Canada, France, Germany, Hong Kong, Japan, Netherlands, Singapore, Switzerland and the UK among others making it a truly global company. Wipro has employees numbering over 10,000, international offices in 24 countries and is listed on the NYSE making it a truly global success story. These large success stories create "success story models" and inspire others to follow in their footsteps. Narayana Murthy (Infosys) and Azim Premji (Wipro) have been compared to Michael Dell in the way he transformed Austin from a sleepy college town with infrastructure problems into a vibrant technology city. These megasuccessful local companies help create the presence of a large number of support industries, which could be common to a large number of existing smaller players or future new entrants making their entry easier. They are also in themselves sources of innovation capable of impacting and driving the industry forward into the future.

Weather

Bangalore has a pleasant climate with temperatures ranging from between 14 degrees C to 33 degrees C. It is known as the Garden City of India due to its tree lined streets and abundant greenery with Forbes magazine calling it the most livable city in India. This makes it an attractive location for talented people all over India to come and seek careers. The weather also contributed to the decision to locate IIS in Bangalore.

Government Policy

Software Technology Parks of India (STPI) is a society under the Ministry of Information Technology which was set up to promote software exports and is licensed to provide international high speed data communication services to the IT community. It is also a category 'A' Internet service provider. Internet services were first introduced in India at Bangalore by STPI making it the first city of Internet communications in India.

Under the Software Technology Park (STP) scheme STPs can be organised as standalone units or as units located in a STP complex anywhere in India. Companies setting up as STP units are given various incentives with the main incentive being waiver of import duties, income tax exemption for a block of 10 years and 100% foreign equity ownership capability.

International Tech Park Limited (ITPL) and Electronics City are technology parks set up in Bangalore offering modern infrastructure for companies setting up in those parks.

The state government of Karnataka has also added its own incentives to encourage the development of technological industries in Bangalore with various incentives such as entry and sales tax exemption for limited periods of time, power tariff concessions etc. The state government has also set up a venture capital fund (established 1999) to help assist start-

ups and a single window agency to consider proposals for new industries the state with responsibilities to assist in getting land, government clearances and licenses.

English

Due to the British colonial heritage, English is widely spoken and understood by Banaglore's educated workforce providing them with a competitive advantage with English being the primary medium for business and technical communications worldwide. Bangalore's overall literacy rate stands at 83.91%.

Cheap Labour

Bangalore's urban per capita income at current prices (1997-98) is USD532 making it substantially cheaper to do business when compared to wages demanded by workers in developed nations. According to the Organization for Economic Cooperation and Development (OECD), wages of roughly one-third to one-fifth US levels are found to be very attractive when making foreign investment decisions. According to the latest cost of living study by HR management consulting firm William M. Mercer, Bangalore was the 2nd least expensive city in the world in a survey of 144 cities. This study is used by multinational companies in determining expatriate compensation which means Bangalore's expatriates can be paid less.