

# THE NEW MAP OF BENGALURU

**THIS CITY, WHICH MANY CALL SILICON VALLEY OF THE EAST, USED TO BE DOMINATED BY THE INDIAN IT SERVICES INDUSTRY, INCLUDING GIANTS INFOSYS AND WIPRO. TODAY, IT'S THE HUB OF MNC R&D CENTRES. BENGALURU ACCOUNTS FOR A THIRD OF THESE CENTRES IN INDIA, AND THESE CENTRES HAVE BECOME THE CITY'S BIGGEST HIRERS AND BEST PAYMASTERS**

Shilpa Phadnis & Sujit John

It's a city where public bus stops are JPMorgan, Cisco and Intel. It's a city where four of the biggest global retail brands - JCPenney, Lowe's, Saks Fifth Avenue, and Ann Taylor - operate out of a single building. And there's Target and L Brands (makers of the Victoria's Secret brand) in an adjoining one. You will likely not see that anywhere else in the world. Bengaluru is the hub of India's GIC (global inhouse centre of MNCs) phenomenon. About 35% of the 1,500 GICs and 41% of the nearly 1 million GIC employees are based out of the city, according to estimates by consulting firm Zinnov. Delhi-NCR follows at a distant 15% in number of GICs, but these focus on business process management services, unlike Bengaluru, where the focus is R&D. Almost half of the R&D employees in GICs are in Bengaluru.

R&D today accounts for 45% of the GIC employee base, and is growing much faster than their IT and business process management employee bases. Pune is strong in automotive GICs, Chennai and Mumbai in energy GICs, but in almost every other vertical - including in banking, financial services & insurance, where Mumbai has a good number of GICs - it is Bengaluru that is strongest. Be it software, industrial, semiconductor, telecom & networking, and electrical & electronics.

Bengaluru's long history with public sector defence undertakings and their research arms, and academic and research institutions such as IISc explains a good part of this phenomenon. This was the environment that bred the IT services industry and encouraged US chip design firm Texas Instruments to set foot with an R&D centre in 1965. Since then, the city has attracted tech talent from across the country. The growing maturity of the talent in the IT services companies, as also those in new-age companies like Flipkart, gives GICs a ready base of talent. Many say the city's weather and cosmopolitan culture too have played major roles in consolidating its attractiveness.

Today, there's a powerful ecosystem that keeps reinforcing the city's strength. "People talk of Bengaluru as a Super Silicon Valley," says Lalit Ahuja, CEO of Ansr, which

**PSUs were established in the 1950s & 1960s**

1. HAL
2. HMT
3. BEL
4. ISRO
5. BEML
6. IIT
7. NAL

**IT services companies came up in the 1980s & 1990s**

1. Infosys
2. Wipro
3. Mindtree
4. Mphasis
5. Sasken

**Startups emerged in the 2000s**

1. Flipkart
2. Ola
3. InMobi
4. Quikr
5. MuSigma

**Shell**  
Working on technology that seeks to convert municipal, agricultural and forest waste into fuel (petrol/diesel) through a single-step conversion process

**Boeing**  
Playing crucial role in areas like materials science, flight science and data analytics. Building better flight simulation systems to bring down the cost of flight tests

**Goldman Sachs**  
Developing data mining and machine learning algorithms to find correlations between different financial data sets and products. Working on workflow digitization



**THE NETWORK EFFECTS ARE TREMENDOUS WHEN COMPANIES THAT DEPEND ON ONE ANOTHER ARE IN SUCH CLOSE PROXIMITY**


- PARI NATARAJAN, CEO, ZINNOV

works with many GICs. "There are the tech companies like Cisco, Intel, EMC. There are the technology arms of non-tech MNCs. There are IT outsourcing companies - Infosys, Wipro, IBM, Accenture, TCS. There are startups and venture capital. And there are academic institutions. Silicon Valley does not have the outsourcing companies, or the

**VMware**  
India involved in every product and service. Development of distributed firewalls in network virtualization led out of India. Half of engineering in mobile management done here

**Honeywell's biggest aerospace engineering team here.** Most of the work on Boeing 787 flight control done in India. Led development of the petrol turbocharged engine, now used globally. Turbo engines improve fuel efficiency, reduce pollution. Innovated a cloud for field operations - connecting systems, machines, employees, business partners

tech arms of non-tech MNCs." The impact of this is unique. PARI Natarajan, CEO of Zinnov, provides an example from financial services. Wells Fargo, JP Morgan and Goldman Sachs have major tech arms in Bengaluru. So do those who provide banking software to them - Brighthouse, Fiserv and Misy - as also those who provide their enterprise software - SAP, Oracle - and those who provide their IT infrastructure platforms - Microsoft, Dell-EMC. Natarajan says the network effects are tremendous when companies that depend on one another are in close proximity.



**BENGALURU TRAFFIC MAY CAUSE THEM A LOSS OF \$1 MILLION, BUT IF THEY DON'T COME TO THE CITY, THEY STAND TO LOSE \$100 MILLION**

- K S VISWANATHAN, VP, NASSCOM

travel technologies and which has a major centre in Bengaluru, says they use a lot of Oracle and Adobe, "and both are right next to us" in Bengaluru. Nivruti Rai, country head of Intel, says Bengaluru offers a congregation of Indian and global enterprises creating tremendous collaboration opportunities to accelerate innovation and growth. German IT company T-Systems for automobiles is said to have established a big centre in Bengaluru partly because their customers Daimler and Bosch urged them to move closer. "Any and every talent is available here - from mainframe (computers) to bleeding edge areas like cloud, mobility, big

data. Mainframe talent is not available in our other locations," says Ganeshan. Natarajan's colleague in Zinnov, Anand Subramaniam says his latest survey on R&D hiring in GICs shows Hyderabad picking up. But that might be partly because real estate in Bengaluru has become a constraint. "Bengaluru commercial real estate has been booked for the next five years," says K S Viswanathan, IT industry body Nasscom's head of industry initiatives. What about the city's infamous traffic, isn't that a deterrent for GICs? Viswanathan laughs: "It may cause them a loss of \$1 million, but if they don't come to Bengaluru, they stand to lose \$100 million."



JCPenney has created an automated solution for quality assurance of the product catalogue. What used to take 20 minutes through manual checks is now completed in 1 minute. Has helped optimize the search facility

Philips has built low-cost ultrasound and ECG machines. Built a bilirubin (jaundice) measurement device that uses harmless light - needs to be simply held to a newborn's forehead. Does big data analysis to determine things like patient's probability of readmission

- NORTH BENGALURU**
- Rolls Royce
  - SAB Miller
  - Lowe's
  - ANZ
  - JCPenney
  - AXA
  - Saks Fifth Avenue
  - NVIDIA
  - Victoria's Secret
  - Alcatel Lucent
  - Philips
  - Astra Zeneca

- CV RAMAN NAGAR**
- Texas Instruments
  - Volvo
  - Juniper Networks
  - Alstom

**WHITEFIELD**

**ABB**  
Biggest R&D centre in the world. Has built a wireless, pocket-sized smart sensor that reduces unplanned downtime by up to 70% and extends the life of a motor in a factory by up to 30%. Deployed around the world

**Mercedes-Benz**  
For all Mercedes car lines, the rear seat safety mandate is in India. Centre works on doors and chassis. Has built cutting-edge algorithms - involving over 250 patents - that help simulate and test various systems

**Dell**  
Instrumental in the architecture, design, development of the latest 14th generation PowerEdge server - which takes scalability, automation, and security to new levels

**Huawei**  
Major contribution to design and development of CarbonData program, a highly efficient storage format that has been deployed globally. Next-gen telecom protocols developed here. Honor 9 Lite smartphone software made here

**SAP**  
Contributes significantly to flagship products such as Hana, the platform for next generation applications and analytics, S/4Hana, the real-time ERP suite for digital business, and holds key product responsibilities in analytics and IoT portfolios

**General Electric**  
GE's largest multidisciplinary R&D centre, housing engineering teams from across verticals such as healthcare, aviation, transportation, power, oil & gas

**ADOBE**  
Some of Adobe's biggest products - Acrobat, Illustrator, InDesign - are now entirely developed and managed out of India

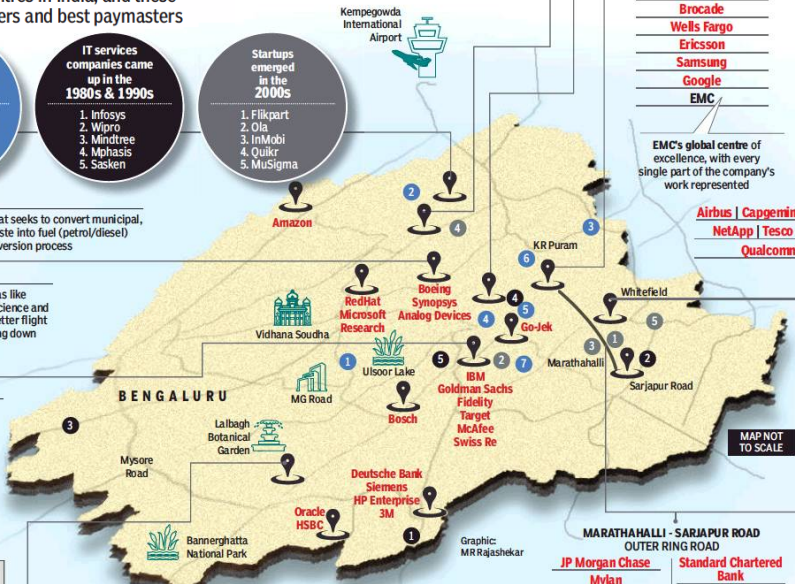
**Intel**  
Intel's largest design centre outside the US. Engaged in cutting-edge engineering work such as system-on-chip design, graphics, software and virtual for the cloud, involving AI, virtual reality and 5G

**HARMAN**  
Company used to serve luxury cars. Bengaluru centre designed a more cost-effective hardware and a simpler software architecture, and this platform now runs on numerous mass brands globally

**Amadeus**  
Core analytics platform and parts of airport operational data store built here. Data store is the heart of the airport, the system that manages all events, including optimizing the way flights take off

**Cisco**  
Significant portion of team that works on collaboration portfolio here. Works on all elements of the automation platform. Did significant work recently on rewriting core operating system to modernize it

**Walmart Labs**  
Fully built the competitive analytics platform that checks prices of competitors to ensure Walmart always has the lowest price. Built the platform that recommends the most optimized sourcing route when customers order multiple items. Built the platform that recommends where to establish stores



MAP NOT TO SCALE

- MARATHAHALLI - SARJAPUR ROAD OUTER RING ROAD**
- JP Morgan Chase
  - Mylan
  - Juniper Networks
  - Schneider Electric
  - Wells Fargo
  - LG
  - Seagate
  - Great-West Financial
  - Honeywell

- Standard Chartered Bank**
- Morgan Stanley
  - Accenture
  - Broadcom
  - Northern Trust Bank
  - State Street
  - Standard Chartered
  - ARM
  - Nutanix