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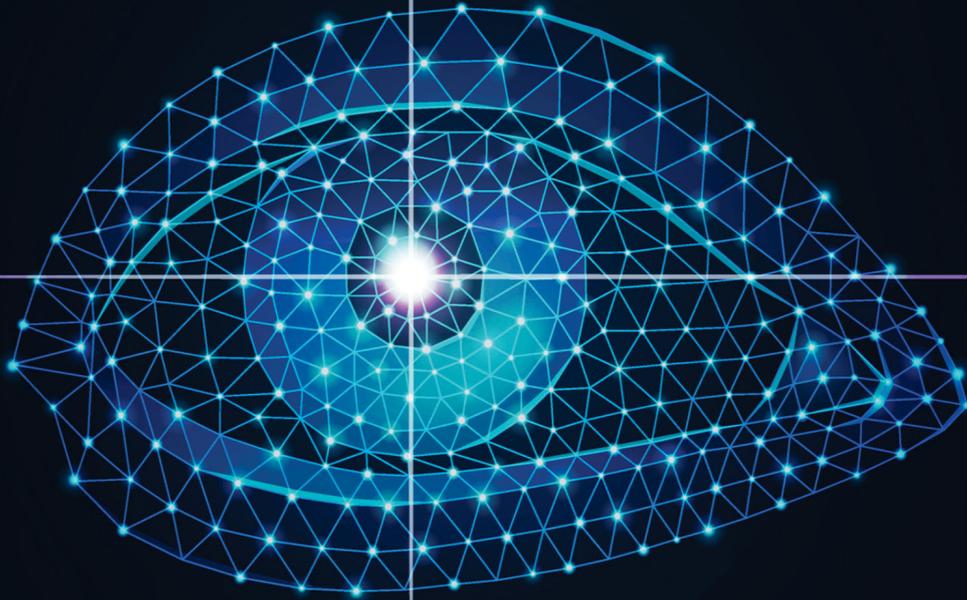
BCIC Office Bearers - 3

Article - 01
Make in India with Japan, for the Globe - 6

Editorial
Automotive Functional Safety and Cybersecurity - 4

Article - 02
The Changing Dynamics of Indian IT Hiring andscape - 9

Article - 03
National Apprenticeship Promotion Scheme by Government of India - 11



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Namma Karnataka-
Gateway to Future India

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Look Beyond

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Automotive Functional Safety and Cybersecurity

Automotive industry is undergoing major technological revolution with more and more electrical & electronics (E/E) devices. Vehicle Architecture that includes hardware (EE devices) and software. It applies to all kind of Autonomous, electrification and connected vehicle. There is an increasing need for embedded electronics and software. Vehicle features and functions are primarily enabled through software which makes vehicle software-defined vehicle. Vehicle is getting transformed from hardware based to a software-centric electronic device on wheels. Software-defined vehicle has million lines of code deployed on it.

New generation car can have up to 80 Electronic Control Units. ECUs connect with vehicle sensors, cameras, radar, Lidar, controls and actuators. Many sub-systems of ECU perform many critical functions which require a high level of safety and security.



Safety and security have become the most critical issues and major concerns in automotive engineering. Largely due to innovation in next-generation cars in connectivity to external networks, increased automation, development of autonomous driving, infotainment system and so on.

Security refers to the level of protection of the vehicle from external threats. It includes all the measures taken to protect the systems and the data from being attacked. Security systems includes alarms, remote key less entry, centralized locking system, immobilizer and many more.

Safety and security go together to protect from any undesirable events such as failures or theft. Hence standards are devoped to protect the interest for safety and security to adopt a framework, best practices and certification.

Functional safety ensures that the physical integrity of the driver, passengers and other road users. Safety systems in vehicles has two parts - active or passive. Active safety will include for example, brake assist, anti-lock braking system (ABS), electronic stability control, collision warning, Advanced driving assistance systems (ADAS) while passive safety systems comprise of air bags, seat belts, crush zones, or position of fuel tank.



There are primarily three ISO standard which are explained below:

ISO 26262- Functional Safety

- ISO 26262 is an international standard for functional safety for the development of electrical and electronic systems that includes hardware and software in road vehicles. It is a framework to minimize the risk of accidents and ensure that automotive components perform their intended functions correctly and at the right time
- Standard is developed for automotive lifecycle and supply chain model and designed for embedded systems developers with aim to eliminate risk and mitigate each risk functions
- The goal of the standard is to ensure safety throughout the lifecycle of automotive equipment and systems
- ISO 26262 is a risk-based safety standard that's derived from IEC 61508.
- A "system" in this context is an E/E (Electrical/Electronic) control system, which typically consists of Control elements ECU, Sensing elements, Actuation elements Power and communication elements etc and related software.
- Functional Safety to ensures that unreasonable risk does not manifest as a result of malfunctioning behavior of the E/E system
- Standard covers all of the functional safety aspects of the entire development process: Requirements specification, Design, Implementation, Integration, Verification, Validation and Configuration

ISO: 21434 Automotive Cybersecurity

- It is a framework that focuses on the cybersecurity risk in road vehicle electronic systems
- Monitor for detect and respond to cyber-attacks, cyber threats and vulnerabilities to establish a consistent process
- Specific requirements for cybersecurity risk management regarding engineering for concept, development, production, operation, maintenance and decommissioning to be demonstrated by manufacturers and suppliers with due diligence in the implementation
- Applicable to road vehicle and all electronic systems, components, and software in the vehicle, plus any external connectivity & interfaces
- It does not prescribe specific technologies or solutions

ISO: 21448 - SOTIF (Safety of the Intended Functionality)

- SOTIF is developed to address the new safety challenges that autonomous (and semi-autonomous) vehicle software developers are facing.
- Verifying automated systems is difficult. To avoid potential safety hazards, AI will need to make decisions. This includes scenarios that require situational awareness.
- ISO 21448 will be key to ensure that AI is able to make decisions and avoid safety hazards
- The goal of SOTIF is to reduce potential unknown, unsafe conditions.
- SOTIF applies to safety violations that occur without the failure of a system
- ISO 21448 means taking that situation into account and making decisions based on probability

ISO: 26262
Functional Safety



ISO: 21434
Automotive Cybersecurity



ISO: 21448
SOTIF





Mr. A Murali

Vice President

Toyota Tsusho India Pvt Ltd

Make in India with Japan, for the Globe

Preface

The Government of India, under the leadership of our Honourable Prime Minister Shri. Narendra Modiji led the vision for India towards the USD 5 Trillion economy, and setting a target for us to be a developed economy by 2047. With the significant geo-political and geo-graphical strategic changes post the never-before-seen Covid-19 pandemic hardships, amidst the clarion call for a China Plus One Policy, the Indo-pacific equilibrium is rapidly taking new shape with global ramifications.

India and Japan, the two large democracies, reaffirmed the Special Strategic and Global Partnership based on strong affinities in democratic values, principles, shared prosperity, people-to-people contact. The two countries have shown political willingness and urgency to play larger roles in QUAD cooperation while acknowledging enhanced space for collaboration between India-led Indo-Pacific Oceans Initiative (IPOI) and Free and Open Indo-Pacific (FOIP). Japan's commitment in March, 2022 to invest 5 Trillion JY (USD 42 billion) in India in the next 5 years, is in itself an achievement of its own.



The well known **"Make in India"** initiative of Govt. of India provides limitless possibilities for Japanese businesses to grow in India and in becoming brand ambassadors which would deepen economic and investment ties in a sustainable and inclusive manner. The clean energy partnership will be on electric vehicles, storage systems including batteries, charging infrastructure, and hydrogen. India and Japan has signed Memorandum of Cooperation on cybersecurity, Sustainable Urban Development, and an agreement on decentralized wastewater management. The Japan International Cooperation Agency (JICA) has approved loans worth Rs 20,400 crores for cooperation infrastructure, connectivity, biodiversity, and healthcare.

Japan is a key partner in India's economic transformation. Japan's interest in India is increasing due to a variety of reasons including India's large and growing market and its resources, especially the human resources. The India-Japan CEPA that came into force in August 2011 is the most comprehensive of all such agreements concluded by India and covers not only trade in goods but also Services, Movement of persons, investments, intellectual property rights, custom procedures, and other trade related issues. The CEPA has abolished tariffs of over 94% of items traded between India and Japan. India is Japan's 18th largest trading partner and despite the disruptions during Covid-19 pandemic, the trade volume between the two countries have grown. India's exports to Japan have grown from USD 3826.8 mn. (2016) to USD 4043.3 mn. (2020) by 1.4%. This will further increase in the years to come.

The diplomatic relationship between Government of India and Government

of Japan is also of a very high order with leaders of both the countries visiting each other's countries frequently.

Role of BCIC

BCIC in its part, to strengthen trade and commerce, investments between India and Japan has become the first industry body from India to start an office in Tokyo last year, coinciding with the 70th anniversary of commencement of India Japan diplomatic ties. The inauguration of the launch ceremony of our Japan office BCIC JAPAN took place at the Office of Embassy of India in Japan at Tokyo on October 6, 2022.

BCIC JAPAN is well connected with the Embassy of India in Japan and other prominent Chambers of industry and commerce in Japan.

Prior to this momentous launch, BCIC had signed a MOU on Aug 19, 2021, when Mr. T R Parasuraman, Executive Advisor - Toyota Kirloskar Motor Pvt. Ltd was its President,

to open its first international office in Tokyo with JETRO-Bengaluru, Toyota Tsusho India Private Limited, InterTrade K K, Japan and India Research Institute Pvt. Ltd as Partners, with the objective to promote trade and commerce, improving relations and facilitating investments, people to people connect and cultural exchanges. The Partners are giving it all to ensure the vision gets transformed into reality, phase by phase.

With new insights and teamwork, passionately on a selfless basis, the team at BCIC JAPAN led by Dr. K G Suresh, Country Manager – BCIC JAPAN alongwith Executive Committee Members Mr. Kazumasa Kuboki, Chief Mentor – BCIC JAPAN and Mr. Anil Raj, Executive Committee Member have been reaching out to various Chambers and Industry bodies in Japan alongwith having a fine working relationship with the Embassy of India in Japan. The team is also connecting with the Indian Diaspora in Japan through various forums.

BCIC, alongwith a collaboration with Indo-Japan Business Council, Pune, to strengthen further the India Japan relationship, and under the aegis of BCIC JAPAN, is planning to have INDIA JAPAN BUSINESS SUMMIT, a one day international event on Friday, July 14th at Bangalore. The theme “Make in India with Japan, for the Globe” is also close to our vision of Future India.

How can we tap the opportunity:

The State of Karnataka, where Bangalore is headquartered :

- Is one of the top industrious states in India.
- Blessed with educational institutions of high repute.
- Abundant skilled resources are available in Karnataka.
- To attract Japanese investments, the Govt. of Karnataka has set up a Japanese Industrial Zone in Tumkur Narasapura.
- Has well known Japanese companies operating in the city of Bangalore.
- Has close association with JETRO to promote Japanese investments and enhance trade ties between the two countries.

- Has a land bank of 50,000 acres for industrial development
- The city of Bangalore has a good Japanese population within India.
- Bangalore is well connected with a direct flight to Narita, Tokyo.

BCIC, an apex Chamber in the State of Karnataka:

- Is the first industry body from India to set up an office in Tokyo, Japan to further investments, trade and commerce.
- Issues Certificate of Origin and Visa recommendation letters to its Members and Non-members.
- Has established a strong connection with Japanese Consulate in Bangalore, JETRO Bangalore & JETRO, New Delhi. There is a strong connection with Indian Embassy in Japan on matters relating to External Affairs.
- Well connected with various Advisors/ Domain experts. The Advisors can support in setting up of factory/office anywhere in India using their Network. BCIC can co-ordinate and handhold Japanese companies in the initial stages.
- Has good relationship with GoK (Govt of Karnataka), and can facilitate for quicker interactions and approvals in Karnataka for Japanese companies. BCIC can do advocacy with GoK which supports the various initiatives of the Chamber and its member companies.
- BCIC JAPAN's Executive Council members have Japanese language

skillsets and are familiar with the Indian culture, regulatory systems and practices in both Japanese and Indian Market.

- BCIC Japan will facilitate translation and interpretation facility.
- BCIC, on a case to case basis, using its network with its members, can support in
- Market Entry Expansion
- Distribution Partner Research
- Business Incubation with Plug-n-Play facility
- B2B and B2C meetings
- Networking Sessions/ Conferences/ Panel Discussions/ Seminars
- Joint Ventures and Mergers and Acquisition
- Business Support
- Trade and Business Development
- Technology Transfer
- Hosting High Level Delegation
- Business Implementation
- Business Registrations including Startups
- Provide office address for Japanese companies to register on temporary basis, and advise them.
- Help in finding accommodation with its tied-up agents.
- In enabling its office infrastructure for usage. There is a separate space earmarked for start-ups with an incubation centre in it.



The Summit

The forthcoming India Japan Business Summit is an unique platform for business leaders, policymakers, and academicians to come together and discuss various aspects of economic ties between the two countries and by sharing best business practices. The Summit aims to explore new areas of collaboration between the two nations and facilitate exchange of thoughts and people to people connect. It also provides an opportunity to showcase the strengths and potential of both nations to each other. This event aims to bring together influential business leaders from India and Japan for a day of insightful discussions, networking opportunities, and exploring potential collaborations and investments.

With the theme of “Make in India with Japan, for the Globe,” the Summit will feature distinguished keynote speakers from both countries, including Mr. Nakane Tsutomu, Consul General of Japan in Bengaluru, Mrs. Gitanjali Kirloskar, Chairperson &

Managing Director, Kirloskar Systems Ltd and varied experienced industry leaders who will share their expertise and vision for future bilateral trade. This Summit will cover a wide range of topics, including the future of trade between India and Japan, the transformative role of technology, quality with manufacturing focus in business, and the significance of fostering innovation and manufacturing excellence. President of the BCIC, Dr. L Ravindran, expressed the chambers commitment to promoting trade and investment between India and Japan, emphasizing the immense growth potential for businesses in both nations in the current geo-strategic and geo-political situation. “This international conference serves as a prime opportunity to showcase the vast array of possibilities in both countries, allowing businesses to thrive and expand their horizons. The resources and skill sets available in India has to be deeply leveraged to promote manufacturing excellence in a big way with the support of Japan towards Atma Nirbhar Bharat” he remarked.

“Our aim is to provide a platform for businesses from India and Japan to forge strong connections and foster meaningful collaborations,” stated Mr. Siddharth Deshmukh, President of the IJBC. “We are eager to witness the synergy between these two vibrant economies and assist in establishing enduring relationships.”

The Summit is anticipated to attract large number of corporates and esteemed business leaders from India and Japan; this conference presents an invaluable occasion for businesses to stay abreast of the latest industry trends, forge connections with potential partners, and explore untapped markets.

Regardless of size, sector or industry, with or without a Japanese focus, delegates from all businesses are welcome to participate in this invaluable event.



For further information, including registration details and sponsorship opportunities, please visit the event's official website at

<https://www.bizcon.ijbc.org>

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The Changing Dynamics of Indian IT Hiring Landscape

Mr. Manas Dasgupta

Chairman, IT & Cybersecurity
Expert Committee, BCIC &
Founder and CEO
Teksands



IT Hiring in the past year - year and a half have been subdued in India and there is no signs of a revival in sight for the moment as I write this article in June, 23. There are several elements in the Indian IT market that have changed in the last few years including the covid years that have significant bearing on the current state.

To begin with, let us understand the nature of the Players in Indian IT.

IT Services companies are the biggest recruiters of skilled IT manpower. Every year, there is not only significant intake of experienced manpower, but there is a massive number of fresh Engineering graduates who get inducted into the industry through the IT Services Players. These IT Services companies along with their other IT Enabled Services peers account for about 8-10% of India's GDP. These IT Services companies can be bracketed in various categories as in the below table:

(For the perspective of IT Hiring, this table includes foreign originated companies with large bases in India).

Super Biggies	Biggies	Mid-Sized
TCS: 600,000+ employees	Hexaware: 30,000+	Sonata Software: 6000+
Cognizant: 350,000+	mPhasis: 30,000+	Visionet Systems: 5000+
Infosys: 350,000+	Persistent: 20,000+	3i Infotech: 4000+
Wipro: 250,000+	Zensar: 11,000+	Happiest Minds: 4000+
HCL Technologies: 225,000+:		
Cap Gemini: 185,000+		
Tech Mahindra: 150,000+		
L&TMindtree: 120,000+		

(The above table is just a sample and the full list is much bigger).

Every year, the IT Services companies add 500,000+ jobs and a significant portion of it is in the form of Fresh Graduates (about 300,000 - 400,000) by rough estimates. This has been the trend for a significant number of years now, with unabated growth in Indian IT. Most of the growth in Indian IT have been with IT Services companies.

However, over the last few years, the dynamics of IT Hiring has been steadily changing. GCC or Global Captive Centers of Foreign originated companies have been setting up shops over the last few years and the rate of expansion in this front has accelerated phenomenally in the last 2-3 years. As on now, India is home to more than 1600 GCC and expected to grow to 1900 by end of 2025 by a Nasscom estimate. These GCCs employ more than 1.5 million people as of today, and a significant portion of this employee base in IT. The size of the largest GCC in India is approaching 50,000 and more than 15 GCCs employ more than 15,000 people. These statistics reflect on how the GCCs are coming neck to neck in the IT Hiring Market.

The third player in the IT hiring market is the Technology Startups or Startups in Technology Enabled Businesses. Many of these startups are well funded and are looking for highly skilled IT professionals. An estimated 150,000 people are employed by startups in India as on today, of which a good portion are in IT.

The above figures show the composition of the Indian IT Industry in the perspective of Hiring of professionals. Question is what changed in the last year or so which subdues the hiring market.

Exhibit 1: An estimated 27,000+ employees were retrenched by Startups in the last

year. A large part of this number are high skilled, experienced IT professionals who suddenly flood the market. This makes an impact, although small, to the net IT professional additions by the industry.

Exhibit 2: Expansion of the GCCs. The GCCs want to hold execution control of their projects closely while reaping the benefits of the cost leverage and skills availability in India, and that is possible through expansion of their own GCCs. However, there is a distinct difference in the hiring pattern or preference of the GCCs than their IT Services counterparts in India. Most GCCs prefer to hire highly skilled and experienced manpower, while IT Services companies hire a very large fresher pool every year. If a project of 50 people is executed by an IT Services company, at least 10 juniors or freshers get employed in that. IT Services companies have a solid system of training, inducting and grooming this fresher pool to make them ready for real-life projects. This is largely missing in the GCC arena. Hence, as more projects are moving towards GCCs, there is a numbers impact we can expect in terms of net fresher hiring year on year.

As a result of the above couple of reasons, the hiring situation has transformed in recent times. We are increasingly seeing fall in net new number additions, however, there is fierce competition for experienced resources. When someone decides to

switch today, a favourite thing to show off to their friends is the total number of offers held before joining the next company.

However, there are other significant factors. From my discussions with some my colleagues in the front end of business development in markets like the US, there is spend happening. However, there is recessionary pressures that are anticipated both in the US and Europe - Indian IT's biggest markets. Very large transformational projects are not taking off that frequently as organisations are playing safe and holding cash. There is pressure on cost efficiency through large scale adoption of new tools and technologies like DevOps, Cloud, ChatGPT and so on.

There are certain contrary facts as well that - the top 10 US banks have increased their IT Spending for the year 23-24 by more than 10% on an average. Whether these allocations are actually leading to real spend is something to see. However, for now, we are seeing less and less multi-year USD Billion+ deals by IT Services companies.

Fingers crossed for the geopolitical conflicts to end, towards a more stable world, that would ease out recessionary threats from most economies, and for the industries and IT hirings to thrive again shortly.





Mr. Bala Phani Kumar

Director – Skill Development
Brigade BCIC Skill
Development Academy

National Apprenticeship Promotion Scheme by Government of India

The Apprentices Act, 1961 was enacted with the objective of regulating the promotion of training of apprentices in the industry by utilizing the facilities available therein for imparting on the job training. Ministry of Skill Development and Entrepreneurship is the administrative ministry responsible for implementation of this act.



The National Policy of Skill Development and Entrepreneurship 2015, launched by the Hon'ble Prime Minister on 15th July 2015, focuses on apprenticeship as one of the key program for creating skilled manpower in India. The policy proposes to proactively work with industry including MSME sector to facilitate a tenfold increase in apprenticeship opportunities across the country.

The primary thought behind this scheme is to develop skilled manpower for industry by using training facilities available in the establishments without putting an extra burden on the government exchequer to set up training infrastructure. Persons after undergoing apprenticeship training can easily adapt to industrial environment at the time of regular employment.

Apprenticeship training consists of Basic Training and On the job training/practical training at workplace in the industry. The basic training is an essential component of apprenticeship training for those who have not undergone any institutional training/skill training before taking up on the job training. It accounts for 20-25% of overall duration of Apprenticeship Training. Apart from basic training, there is a component of on the job training which is performed in the establishments and undertaken by the establishment itself.

There are five categories of apprentices namely; trade apprentices, graduate apprentices, technician apprentices, technician (vocational) apprentices and optional trade apprentices.

Current Status

Only 2.3 lakh trade apprentices are undergoing apprenticeship training in 30,165 establishments throughout the country which is miniscule as compared to the total number of establishments in the country. Out of these, 36000 apprentices are in Central Public Sector companies and 1.94 lakh apprentices are in the State Public Sector companies/Departments and Private Sector.

Amendments in the Apprentices Act, 1961

The government has brought comprehensive amendments in the Act in December 2014 to make it more attractive for both industry and youth. Major changes introduced in the amendment are: replacing the outdated system of trade wise and unit wise regulations of apprentices with a band of 2.5% to 10% of the total workforce (including contractual workers), introduction of optional trades, removing stringent clauses like imprisonment & allowing industries to outsource basic training.

Incentivizing Employers

Apprenticeship training provides for an industry led, practise oriented effective and efficient mode of formal training and as such strengthening of apprenticeship training needs to be given a high priority.

The scheme is for

- Sharing 25% of prescribed stipend subject to a maximum of Rs. 1500/- per month per apprentice to all apprentices with the employers.
- Sharing of cost of basic training with Basic Training Providers (BTP) in respect of apprentices who came directly to apprenticeship training without any formal trade. Basic Training cost will be limited to Rs. 7500/- for a maximum of 500 hours of training.

Eligibility of Employer

The Employers interested to avail the benefits of the scheme must fulfil the following:

- Employer shall engage apprentices in a band of 2.5% to 10% of the total strength of the establishment.
- Employers must be registered with EPFO/ESIC/LIN
- Employers must have TIN/TAN number
- Employers must have an aadhar linked bank account.
- Employers must register on the apprenticeship portal.



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