

FOCUS ON NATURAL DISASTERS

Earthquakes are not a result of divine wrath; they are natural geological phenomena caused by the movement of tectonic plates beneath the Earth's surface. Scientists have a good understanding of the mechanisms behind earthquakes and have made significant progress in studying and predicting them.

Earthquakes occur due to the shifting of the Earth's tectonic plates, which can cause stress to build up along fault lines. When this stress is released, it leads to seismic waves, resulting in an earthquake. While we can't prevent earthquakes entirely, we can take steps to minimize their impact and reduce the potential for damage. Earthquake-resistant construction and early warning systems are some examples of measures taken to protect people and infrastructure. The rapid advancement of humans in industrialization and technology has given rise to these terrible natural disasters. It is very important for man to control this. It's important to rely on scientific knowledge and understanding to address natural disasters like earthquakes. Instead, society can focus on preparedness, disaster management, and responsible land-use planning to mitigate the impact of earthquakes and other natural disasters.

Poll Freebies denting Economy

OMKAR DATTATRAY

Unfortunately there is competition between the political parties in promising freebies to the people without thinking about the adverse effects of the poll freebies on the economy of the country .Political parties without any exception announce and promise freebies to the prospective voters irrespective of its bearing upon the economic health of the country .The beginning of the poll freebies and ravi culture has many years ago been made by the AAP of Kejrwal which promised free power and water up to certain units in Delhi and Punjab where its government is in power .But now other parties are stepping into the shoes of AAP and are promising freebies to the people if they vote for them and bring them to power .Earlier BJP was much vocal and was criticizing the AAP for luring the voters by promising freebies without thinking about its sad effects upon the economy of the country .However today all most all political parties which are in power in the states and also the BJP at the centre are not shying from promising poll freebies to the prospective voters thus breaking the back of the economy.NDA government of the centre has announced free ration to 80 crore poor people for the next 5 years if it once again comes to power after the general elections and the cumulative effect of this will be creation of a hole in the pocket of the government.BJP government of MP has announced 1000 pensions to poor women in the state and has also announced Rs 200 to the fair sex on Raksha Bhandan .Similarly the congress government of Rajasthan has also promised free electricity and water to people if it again comes to power in the state elections just few months away .Political parties position their plans as well welfare for the needy and dismiss others as wasteful giveaway .There is no legal definition of freebies ,so a useful thumb rule is to assess whether a government has planned fiscal room before announcing a scheme .India's political climate is heating up ahead of nine state elections and the Lok Sabha elections due within the next seven months .A year after political parties argued over the use of freebies to woo voters ,there is no death of such poll promises and policy moves .Take the recent cabinet decision to increase the cooking gas subsidy for the beneficiaries of the Ujjwala scheme by Rs 100 per cylinder .It comes at a time crude oil prices are on a boil ,and tops up the Rs 200 universal cut in cylinder prices in August. Does it make for a freebie ? Or is the tag better suited to free electricity up to 100 units for families in Rajasthan ,or e-scooters given away to meritorious female students ?The congress has raked their effort in winning the upcoming assembly elections ,being considered the semi-finals before the 2024 Lok Sabha elections .The BJP has been hitting out the grand old party in their election rallies ,targeting what former calls freebies or poll guarantees .The saffron party has been alleging that congress was promise, freebies in poll -bound states in order to gain votes .Notably the BJP has also named this allegation as revdi culture of the congress .Recently West Bengal PCC President Adhir Ranjan Chowdhury hit out at the allegation and citing PM Narendra Modi 's promises before elections, "What is the definition of freebies ?Before 2014 ,Modi Ji said that Rs 15 lakh would be given to every individual in the country. " "This kind of freebies were not realized as they were 'Jumlas by Modi Ji .Whereas ,we are following our promises in both letter and spirit. "Chowdhury added .Poll promises ,guarantees ,also termed freebies or revdi has been a point of friction between rival parties congress and BJP .While congress as part of INDIA bloc looks forward to thwart the saffron party led NDA' attempt to return to power for the third term ,neither side has left any stone unturned in their efforts .Recently the supreme court has issued notice to centre ,MP ,and Rajasthan and ECI in response to a public interest petition -PIL against freebies distribution during elections .The PIL alleged the distribution of cash and other freebies is done at the behest of taxpayers expenses .Before the Karnataka elections Pm Modi had hit at the congress on the issue of distributing freebies ,and said that when party's warranty itself has expired ,its guarantees have no meaning .Modi has stressed that the country will get immersed in debt because of freebies ,and said that the country and the government cannot be run on 'revdi' culture .It is very disturbing that today there is competitive politics being made and resorted to by the political parties so far as the poll freebies are concerned .Today no single party can be singled out for promising poll freebies as parties without any exception indulge in promising poll freebies to woo the prospective voters and therefore the criticism of any one party is not fair as all the political parties in one way orb the other indulge in poll freebies and revdi culture .Last year Supreme Court had sought responses from the union government and ECI on the continued practice of freebies being promised by the political parties before elections ,with an observation that promise of freebies was a serious issue .The apex court had earlier asked the ECI to frame guidelines in the matter .However the ECI had held only one meeting with the political parties asking them for their views .Political leaders offering freebies to lure voters is quite common during the election time in the country .The AAP had earlier won a thumping majority in Delhi Assembly elections in 2015,promising free water and electricity .In the run up to recently held assembly elections in five states ,the AAP had promised to provide free electricity up to 300 units to the people of Punjab ,if voted to power and it is seen that ,has been handsomely rewarded by the voters of Punjab ,decimating the incumbent congress and Akali Dal ,along with BJP .The political climate in the country it seems ,has been infested with the scourge of freebies being announced by the political parties before elections .It is unfortunate that ,even 75 years of independence ,the political parties see freebies as the best lucrative tool to seek public support in the elections .Those promising freebies ,obviously do not pay from their pockets ,but from the tax payers' pockets.

However ,promising freebies from state exchequer ,raises moral ,ethical ,serious administrative and legal issues ,because the revenue is collected from taxpayers by the government ,and set procedures exist for using this money for the welfare of the people .At the end it can be said that all most all political parties are offering freebies to the voters in order to lure them and it can be safely argued that Iss Hamman Mein Sab Nangay hai.

(The author is a columnist,social and KP activist).

GL KHAJURIA

In the vast, varied bio-diversity around the world, the lakes and the wetlands are under great threat. This is more so due to human and biotic interference emanating from ever-escalating population, industrialization, overuse or misuse of land for agriculture and exploitation of resources beyond all limits. Alongside, the natural phenomenon et al sizzling summer with soaring temperature year after year; the abrupt climatic changes off- shooting thereby disasters and calamities such as floods and many more of its ilk have sent alarming signal to the counties all around the world. In such a situation, The Survival of man is in Peril over the planet earth and as preserving bio-diversity has now become a catch phrase such for the ecologists around the world.

In Jammu and Kashmir State, lakes and wetland are drying due to ruthless encroachments and enormous siltation though the Govt. is endeavoring hard for rapid actions under the close surveillance of Forest Deptt. (Wildlife wing and the department of Environment and remote sensing).The public awareness and sensitization is the paramount need of the hour as the forest laws are brought under legislation and enactment but these are being honored in only its breach. This has further endangered thousands of the spectacular wildlife and birds (Avi - fauna) so much so that the winged visitors have become more sensitive and resultantly abandoned the lakes and wetlands and alienated migration which over the centuries has been an ongoing process. Glaringly enough, the Siberian cranes have now abandoned visiting world re-Knowned Bharatpur in Rajasthan and so is the case with chilka lake where the situation is grave. The has adversely affected the socio- economic status of the people, apart from depriving the serene and scenic beauty of these water -



bodies. And in Delhi zoo itself the migratory birds cover long distance for Seasonal changes, food and finding new ground for breeding. The migration of birds in India is around 1200 specious which is spectacular and inspring As per estimates, in India itself 4.5 million hectares comes under wetlands out of which around one and half million, are natural and some two and half million are man made. Cota Donana (spain) is world renowned house ground for half of the avian species in Europe itself, The situation is likewise same around the world insofar as shrinkage of water- bodies is concerned. Talking of our most famous lake (Dal in Valley) the area has now shrunk to 10 kms. Which was around 25sq. kms half a century back .Where has all the depleted area gone? Obviously, it has been either silted or devoured under encroachment. Admittedly, this has broken the natural fabric of environment. Same is the case with wular lake (Asia's largest) which has lost its pristine grandeur and glory.As such, it gives a pointer to the modern man to be eco-friendly and eco-conscious which defacto he is not so.

Over the years, the wild life deptt. in associ-

ation with theover all guidance of Forest Deptt. has endeavored to declare as many areas under wildlife sanctuaries, game reserves parks and further made endless efforts in the preservation of the lakes and other water bodies but again point arise about public awakening which I repeat is the paramount need of the hour: The present status as of now is that we are having as many as seven National parks and wild life sanctures (Dachigam NP, Hemis High altitude NP, Overa WLS, Kishtwar NP, Ramnagar Rakh WLS, Nandni Game WLS, and Surinsar Mansar WLS) and in so far as wetlands are concerned, there are as many as one is Ladakh region, six in Srinagar and five in jammu regions. These are; Noorie Chan WL (Ladakh), Hokar, WL, Shallabug WL, Mirgund WL, Chetlup Pampur WL, Krunchoo WL and Hygam WL in Srinagar and Garang WL, Parwal WL, Nanga WL, Kukarum WL and Sangral wetland reserves in Jammu. The overall status is that there is a sum total of 44 (forty four Game areas under National Parks sanctuaries and wetland reserves and all these warrant protection by all and one in co-operation with the

Deptt, and the close supervising agencies.

It is most unfortunate that sanasar now stands almost shrunk and its restoration is of almost importance where visitors through the lake during summer as well as in winter. The spot is located amidst lush green chir pines and is famous for its scenic and serene beauty which is touching new height for its importance with every passing day.

Some suggestive measure in preserving and protection of the wetland and other water bodies, apart from sanctuaries/National Parks.

► Public awareness: The Jammu and Kashmir Wildlife (Protection) Act 1978 was recently amended in 2002 and the amended rules, regulations, enactment made there under need to be made public by way of conducting debates, seminars symposium to honor the spirit in legal sanctity.

► Environment Protection: This can be done with an equal ease by way of massive afforestation/reafforestation operation by planting the most suited species to site, preferably those which are soil binding and water conserving to dilute siltation of the wetland and avert erosion accruing thereupon.

► Aversion of biotic areas: Here, everyone of us need to be psychologically attuned and mentally prepared to make the wetland neat and clean and full of co-operation warrants to be extended to concerned deptt as a good citizen.

► Non-Diversion of the areas: It should be the most sinful to denitrify the areas under sanctuaries, National Parks, wetland for any purpose under pressure as these areas are as important as our national, heritage.

Will Power: Though the thinkings/attitude differ from person to person, but, there is always something common and that common we have to built in all our senses to safeguard the environs that enlivens us.

Unlocking Opportunities: A Thriving Career in PCB Design and Manufacturing

DR ABHILASHA GAUR

Imagine a world without electronics. It's hard, isn't it? Electronics are the backbone of our modern lives, powering everything from smartphones to spacecraft. Behind every electronic marvel lies a Printed Circuit Board (PCB), an integral part of the technology we rely on. The field of PCB design and manufacturing is one of the cornerstones of the electronics industry, and it's rapidly growing in India. If you're seeking a career that combines innovation, technology, and a promising future, then you should certainly consider the world of PCB design and manufacturing.

PCB Design and Manufacturing Market Size in India

The Indian PCB design and manufacturing market is growing rapidly. According to a report by IMARC Group, the Indian PCB market is expected to reach US\$ 11.8 billion by 2028, exhibiting a CAGR of 16.6% during 2023-2028. Several factors are fuelling the expansion of the Indian PCB market, including the burgeoning Indian electronics sector, heightened consumer demand for electronics products, and the widespread adoption of cutting-edge technologies such as 5G and the Internet of Things (IoT).

The report by Expert Market Research states that the Indian PCB market is expected to grow at a CAGR of 17.2% during the forecast period of 2023-2028. The Indian PCB market is segmented based on manufacturing type and application. The manufacturing type includes bare PCBs and populated PCBs, while the application includes consumer electronics, IT & telecom, automotive, industrial electronics, aerospace & defence, healthcare, and others.

Job Opportunities in PCB Design and Manufacturing

The electronics industry is one of the fastest-growing industries in India, and the demand for skilled professionals in the field of PCB design and manufacturing is on the rise. The PCB design and manufacturing sector in India offers a wide range of job opportunities. Some of the most common job roles include:

- PCB Designer: PCB designers create the layout of PCBs, which includes the placement of components, traces, and vias.
- PCB Layout Engineer: PCB layout engineers work with PCB designers to create and finalise the layout of PCBs.

- PCB Design Engineer: PCB design engineers oversee the PCB design process and ensure that PCBs meet all specifications.
- PCB Manufacturing Engineer: PCB manufacturing engineers oversee the manufacturing process of PCBs and ensure that PCBs are produced to the highest quality standards.
- PCB Quality Control Inspector: PCB quality control inspectors inspect PCBs to ensure that they meet all specifications.
- PCB Assembly Technician: PCB assembly technicians assemble PCBs by placing components on the board and soldering them in place.
- PCB Test Engineer: PCB test engineers test PCBs to ensure that they are functioning properly.
- PCB Sales Engineer: PCB sales engineers sell PCBs to customers and provide technical support.
- PCB Marketing Manager: PCB marketing managers develop and implement marketing campaigns for PCBs.
- PCB Product Manager: PCB product managers develop and manage PCB products.
- Research and Development (R&D) Engineer: R&D engineers in PCB design and manufacturing focus on innovation and new product development.
- Paving the Way: The Role of Electronics Sector Skills Council of India (ESSCI)

Before delving deeper into this exciting career path, it's essential to understand the support system in place to nurture and develop talent in the electronics sector. In India, the Electronics Sector Skills Council of India (ESSCI) plays a pivotal role in shaping the industry's workforce. ESSCI is a not-for-profit organisation established to bridge the skills gap and provide the necessary training and certifications required by professionals in the electronics sector.

ESSCI has developed a number of skills standards for PCB design and manufacturing, including:

 1. PCB Assembly Operator: PCB assembly operator is responsible for manually placing different types of components on the PCB as per the design requirements and then soldering them. With experience and continuous learning, a PCB Assembly Operator can explore various career pathways within electronics manufacturing,

- including:
- a. Lead Assembly Operator: Taking on a leadership role to oversee and guide a team of operators in the assembly process.
- b. Quality Control Inspector: Specialising in quality control and conducting thorough inspections to ensure the highest standards of quality are met.
- c. Process Engineer: Transitioning to roles focused on optimising assembly processes and improving efficiency.
- d. Product Development: Participating in the development of new products or enhancements to existing ones.
- 2. In-Process and Final Quality Engineer: The individual at work sample checks final PCB assembly for functional conformance as well as visually before they are packed and dispatched. The individual is responsible for ensuring total quality or IPC or ISO standards compliance during the assembly of PCBs. A career as an In-Process and Final Quality Engineer can lead to various pathways within the electronics manufacturing industry:
- a. Quality Assurance Manager: Overseeing the entire quality control department, managing a team of engineers, and developing quality control strategies.
- b. Process Improvement Specialist: Focusing on optimising manufacturing processes and enhancing efficiency.
- c. Regulatory Compliance Officer: Specialising in ensuring that manufacturing processes adhere to industry regulations and standards.
- d. Product Development: Participating in the development of new products, with a focus on ensuring their quality and reliability.
- 3. Incoming QC Technician: A career as an Incoming QC Technician can be an excellent starting point for individuals looking to enter the electronics manufacturing industry. It provides foundational knowledge and expertise in quality control processes, which can pave the way for advancement within the organisation.
- The individual at work is responsible for checking quality check on the components and modules procured from suppliers for production of hardware equipment. The individual performs physical and functional quality check processes on the components and modules and ensure QC passed components is used for hardware assembling. With

experience and continuous learning, an Incoming QC Technician can explore various career pathways within PCB manufacturing, such as:

- a. Quality Control Supervisor/Manager: Overseeing the entire quality control department and managing a team of technicians.
- b. Process Engineer: Transitioning to roles focused on optimising manufacturing processes to enhance efficiency and quality.
- c. Product Development: Involvement in the research and development of new products or improvements to existing ones.
- d. Quality Assurance Specialist: Specialising in quality management systems and regulatory compliance.

How to Become a PCB Designer

If you are interested in becoming a PCB designer, there are several steps you can take to get started. First, you should consider pursuing a degree in electronics engineering or a related field. You can also gain experience by working as an intern or apprentice in a PCB design and manufacturing company. Some of the essential skills required to become a PCB designer are:

- Knowledge of electronics and circuit design
- Understanding of PCB manufacturing processes and design tools such as Proteus, Eagle, Altium & ORCAD.
- EDA tool Knowledge
- Should be capable of designing different types of PCBs.
- Capability of designing more than two-layer PCBs.
- Should be strong in transmission line theory.
- Exposure to manufacturing and PCB materials.

In conclusion, a career in PCB design and manufacturing in India offers a multitude of opportunities for growth, innovation, and professional development. With the support of organisations like ESSCI and the rapid expansion of the PCB industry, aspiring professionals can look forward to a rewarding journey in this dynamic and vital sector of the electronics industry. So, if you have a passion for technology and a desire to shape the future, consider embarking on this exciting and promising career path in PCB design and manufacturing.

(The writer is, Chief Operating Officer Electronics Sector Skills Council of India).

Preventive Medicine in the Digital Age: How Technology is Revolutionizing Healthcare

DR. PRABHU NESARGIKAR

In today's rapidly evolving world, the practice of medicine is undergoing a profound transformation. Thanks to the integration of cutting-edge technology, healthcare is no longer confined to the traditional walls of hospitals and clinics. Instead, it has ventured into the digital age, where preventive medicine is taking the center stage.

Preventive medicine has long been a cornerstone of healthcare. It emphasizes the importance of proactive measures to detect disease before they strike, rather than solely relying on treatments after the fact. The digital age has ushered in a new era of preventive medicine, with technology playing a pivotal role in reshaping the way we approach health and wellness.

Wearable Health Devices: One of the most visible advancements in preventive medicine is the proliferation of wearable health devices. Smartwatches, fitness trackers, and other wearables have become commonplace, allowing individuals to monitor their vital

signs, physical activity, and sleep patterns in real-time. These devices not only provide valuable data to users, but can also aid healthcare providers to gain a more comprehensive understanding of their patients' health by analyzing this data. It helps them to identify potential health risks early and tailor preventive strategies accordingly.

Telemedicine and Virtual Health: Telemedicine has gained widespread acceptance, especially during the COVID-19 pandemic. Virtual consultations and remote monitoring have made it easier for individuals to access healthcare services from the comfort of their homes, especially specialist care which sometimes is lacking in certain areas. Preventive care is no longer limited by geographical constraints or access constraints. Patients can receive timely guidance and advice at the comfort of their homes, reducing the risk of minor issues escalating into major health concerns. The digital age has ushered in a revolution in healthcare, making it more equitable and

accessible to all.

Health Apps and Personalized Health Plans: A plethora of health and wellness apps are now available, enabling individuals to track their diet, exercise, weight and overall health. These apps often employ artificial intelligence and machine learning algorithms to provide personalized recommendations. By analysing an individual's health data and preferences, these apps can suggest tailored preventive measures, from dietary changes to exercise routines. They empower individuals to take charge of their health and make informed decisions.

Big Data and Predictive Analytics: The digital age has ushered in an era of big data and predictive analytics in healthcare. Health systems are can analyse vast amount of patient data to identify trends and predict potential health outcomes. This allows healthcare providers to proactively target at-risk populations and implement preventive interventions. By harnessing the power of data, we can shift our focus from treating

diseases to preventing them.

Genetic Testing and Precision Medicine: Advances in genomics have led to the emergence of precision medicine. Genetic testing can identify an individual's predisposition to certain diseases and help customize preventive strategies accordingly. By understanding genetic risks, healthcare providers can offer personalized recommendations, such as tailored screening schedules or lifestyle modifications, to mitigate these risks effectively.

Health Education and Awareness: The internet and social media have become powerful tools for health education and awareness. Patients can access reliable information, engage with healthcare professionals on various platforms, and participate in online support communities. Preventive medicine is not just about diagnosing and treating; it's about empowering individuals with knowledge and fostering a sense of responsibility for their health.

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