IEEE India Info
IEEE India Council Newsletter

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Message from the Chairman

Dear IEEE Members,

At the outset, I express my sincere thanks to all the IEEE members in India for giving me the opportunity to serve them as the Chair of IEEE India Council in 2017. It is a great opportunity, but at the same time is a big responsibility. I would like to rise up to the expectations of the membership to the best of my ability. I also express my happiness to have a very strong and energetic team including office bearers and execom members to take forward to activities of IEEE IC in this year. Each of them is committed to the cause of IEEE and is geared up to give their best. My hearty thanks and appreciation to all of them for shouldering such responsibilities.

The IC Newsletter is coming out in its new avatar through this first issue in 2017. As you may be aware that Mr. H.R.Mohan has once again taken up the challenging task of the Newsletter Editor (He was the editor during 2013). I convey my deep appreciation for the services extended by Mr. Mohan in coming up with a commendable version of the newsletter. I would also like to put on record that all the Sections extended their overwhelming cooperation in providing the inputs to the newsletter. I thank all the Section leaders for their support.

The flagship program of IEEE IC, viz. INDICON 2017, will be held in IIT Roorkee in collaboration with IEEE UP Section. I hereby appeal to all IEEE members to make this INDICON another success story, as in the previous years. In this context, I would also like mention that IEEE IC Execom has finalized a new Logo for INDICON this year. All India Students Young Professional Women in Engineer's Congress will be held in MNNIT Allahabad. Details will be circulated shortly. In a major step towards coordinating Students' and Young Professionals' activities in India, VC SAC, Prof J.Ramkumar, and VC Young Professional, Mr. Gitansh Anand, have formed Students Coordination Team comprising 30 student volunteers from different sections, under 10 committees. IEEE IC is in the process of instituting two distinct annual awards for WIE. The details will be available soon. IEEE WIE ILS will be held in Goa with IEEE IC co-sponsorship. IEEE IC partnered with Google for conducting Google Android Development Program for students members of IEEE CS. It may be seen that we already had an eventful first quarter of 2017 and a packed year is ahead of us with exciting programs. Let us all join our hands together to make these programs successful and memorable.

I would also like to highlight one more achievement of IEEE IC in the first quarter of 2017. Dr. Suryanarayana Doolla has taken up the responsibilities of IEEE IC Webmaster in 2017. He has done an outstanding job in the shortest possible time and come with a new website for IEEE IC, which is not only informative and easy to navigate, but also contemporary in design and appearance. My heartfelt thanks to Dr. Surya for his enormous efforts.

I might have missed some event or some major initiative from some IEEE Volunteers in this message, albeit inadvertently. Please bring the major efforts to my notice so that those can be highlighted in the later editions.

I am sure that with the help of active IEEE volunteers in India, we will be able to keep the momentum in publishing attractive IEEE IC Newsletter in the months and years to come, which will be of archival value.

With warm fraternal greetings,

Sivaji Chakravorti
Chairman, IEEE India Council
s_chakrav@yahoo.com

Message from Editor

H.R. Mohan
hrmohan.ieee@gmail.com

Dear readers,

IEEE India Info wishes its readers a HAPPY & PROSPEROUR NEW YEAR 2017.

We are presenting you this current issue of the India Council Newsletter (ICNL) after a short break. The ICNL will be a quarterly e-newsletter from now on and the increase in its frequency will be decided over a period of time based on the readers response and patronage.

As you are aware, the newsletters of an organisation serve as the archives of the activities and have a major role to play in the history of the organisation. We wish the ICNL, apart from the record of activities of IEEE India Council (IC) to include some articles of current interest.

In this issue of ICNL, we have published the Secretary's Report of the IC presented during the Annual General Body Meeting of the IC which highlights the major activities during the year 2016. The abridged versions of the annual reports (for the year 2016) of the IC Sections such as Kharagpur, Bombay, Kerala, Gujarat, Pune, Madras, Kolakta, UP and Bhuvaneshwar Sub Section with links to their full reports running in several pages. These reports which were submitted to the IEEE Region 10 presents a variety of activities that were held in India. Additionally, the activities of few IC society chapters like Power & Energy (PES), Electronic Devices (EDS) Circuits and Systems (CAS) along with the reports on major events such as INDICON-2016, All India Student Young Professional and Women in Engineering Congress, India Electronics Week 2017 are also published. In the ICNL, the Section events also will get published. This time, two events of Madras Section and one event of Bombay Section are included. A brief report on the R10 meeting recently held at Japan also featured in this issue. IC Chair Dr. Sivaji and IC Secretary Dr Preeeti have coordinated with the Sections in getting the various reports in the specified format from the Sections. ICNL wishes to record its thanks to them. For the forthcoming issues, we expect the reports from the Sections to be sent to the newsletter directly at ieee.icnl@gmail.com as per the guidelines available at https://goo.gl/DcVPmx as well as at https://goo.gl/rh3lsm

ICNL wishes to thank the authors of the following informative and current interest articles published in this issue.

- Engineering Education in India: The Malady and the Remedy by Dr. Ilango, Former V. C., Bharathiar University.
- The Digital Future, Innovation & Societal Transformations through ICT Technologies by Prof. K Subramanian, Chair, IEEE Delhi Section.
- Digitalisation trends in Enterprises by Mr. G.B Ponmanivannan, L&T Technology Services.
- Sustainable Building Management System by Mr. Mr. R. Balakrishnan, L&T Construction.
- Reverse Supply Chain Management E-Waste Handling System Review by Mr. T. Udhayakumar, SRM Univ., et.el
- The Need for a New School of Thought Human Potential Development by Mr. Chhaya Ballav Sahoo, Human Potential Development Science Pvt Ltd.

Prof. S. Sadagopan, Director, IIIT Bangalore has been anchoring a column "IT in India" in ICNL for the last few years and has consented to contribute regularly for this column. Similarly, the column "Information Resources" compiled by the editor Mr. H.R. Mohan from 2013 which features links to some interesting resources will be published regularly in the newsletter.

The "Announcements" will be a regular section in the ICNL with valuable inputs to the members for deriving maximum benefits from IEEE.

To increase and encourage readership of ICNL, a quiz is included in the newsletter. Two lucky winners will receive Amazon Gift Cards worth Rs. 500/- each. We are sure the readers will participate in this quiz.

We wish to make ICNL, a source of information to our members comprising of professional, academic faculty and students. In this context, we look forward to activity reports from IEEE OUs, articles and research findings on current interest topics from the academic community, articles sharing the experiences and best practices from professional members. We also seek your valuable feedback for improvement. Pl. mail them to ieee.icnl@gmail.com

ICNL also wishes to remind that from 15th March, one can join as a new member of IEEE by paying just 50% of the annual membership fee and enjoy the member benefits for an extended period of over nine months. Please encourage your friend s and colleagues to become members of IEEE and get enriched professionally.

India Council Executive Committee – 2017

Name	Role	Section	Email ID
Dr. Sivaji Chakravorti	Chair	Kolkata	s_chakrav@yahoo.com
Dr. Preeti Bajaj	Secretary	Bombay	preetib123@yahoo.com
Dr. S. M. Sameer	Treasurer	Kerala	sameer@nitc.ac.in
Mr. Deepak Mathur	Imm. Past Chair, Chapter Coordinator	Gujarat	deepakmathur@ieee.org
Dr. S. N. Singh	Chair Elect	UP	snsingh@iitk.ac.in
Dr. Satyanarayana Bhessette	Vice Chair - Technical Activities	Bombay	bsn@tifr.res.in
Mr. Abhay Phansikar		Bombay	aphansikar@gmail.com
Dr. Suryanarayana Doolla	Webmaster	Bombay	suryad@iitb.ac.in
Mr. Gitansh Anand	Vice Chair -YP, Coordinator – St. Activities	Delhi	gitansh92@gmail.com
Dr. J. Ramkumar	Section Chair, Vice Chair – St. Activities	UP	jrkumar@iitk.ac.in
Dr. Debatosh Guha	Vice Chair - Conferences	Kolkata	dguha@ieee.org
Mr. H R Mohan	Vice Chair – Professional Activities, Newsletter Editor	Madras	hrmohan.ieee@gmail.com
Dr. Rajesh Ingle	Vice Chair - Awards	Pune	ingle.rb@gmail.com
Dr. Rajashree Jain	Vice Chair - WIE	Pune	rajashreejain@gmail.com
Mr. Antony Lobo	Section Chair, Membership Development	Bombay	anthonylobo@ieee.org
Dr. Atul Negi	Vice Chair - Educational Activities	Hyderabad	atul.negi@ieee.org
Mr. Harish Mysore	India Office	Bangalore	h.mysore@ieee.org
Dr. M. Ponnavaikko	Ombudsman	Madras	ponnav@gmail.com
Dr. Debabrata Das	Section Chair	Bangalore	ddas@iiitb.ac.in
Mr. Antony Lobo	Section Chair	Bombay	anthonylobo@ieee.org
Dr. K Subramanian	Section Chair	Delhi	ksmanian48@gmail.com
Dr. R.B. Jadeja	Section Chair	Gujarat	rjadeja2001@gmail.com
Dr. M Lakshminarayana	Section Chair	Hyderabad	lnmerugu@ieee.org
Dr. Suresh Nair	Section Chair	Kerala	drkrsnair@gmail.com
Dr. Amitabha Bhattacharya	Section Chair	Kharagpur	amitabha@ece.iitkgp.ernet.in
Dr. Sujit K. Biswas	Section Chair	Kolkata	sujit_biswas@hotmail.com
Dr. M.A. Atmanand	Section Chair	Madras	atma@niot.res.in
Prof. G. S. Mani	Section Chair	Pune	gsmanihome@yahoo.com

India Council Secretary's Report
presented at the AGM 2016 on 18th Dec 2016

IC Executive Committee 2016

Name	Office	Section
Mr. Deepak Mathur	Chair & In charge Chapter Activities	Gujarat
Dr. Sivaji Chakravorti	Chair Elect	Kolkata
Mr. Anthony Lobo	Secretary	Bombay
Dr. Anil Roy	Treasurer & VC Conferences	Gujarat
Dr. M. Ponnavaikko	Immediate Past Chair	Madras
Dr. Suryanarayana Doolla	Vice Chair, Awards	Bombay
Dr. S.M. Sameer	Vice Chair, Educational Activities	Kerala
Dr. Rajesh Ingle	Vice Chair, Industrial Relations	Pune
Mr.T S Rangarajan	Vice Chair, Marketing	Madras
Dr Kumar Vaibhav Srivastava	Vice Chair, Membership Development	UP
Dr. Sujit K Biswas	Vice Chair, Professional Activities	Kolkata
Dr. Preeti Bajaj	Vice Chair, Student Activities	Bombay
Dr. Amit Kumar	Vice Chair, Technical Activities	Hyderabad
Dr. Vijaya Lata Yellasiri	Vice Chair, WIE	Hyderabad
Mr. Gowtham Prasad K. N.	Vice Chair, Young Professionals Program	Bangalore
Mr. Rajendra K Asthana	Ombudsman	Delhi
Mr. N Thankappan Nair	Newsletter Editor	Kerala
Mr. Quraish H Bakir	Webmaster	Bombay

IC Administration & Governance 2016

Update to Bylaws

- At EGM 24 July 2016 existing Bylaws further aligned to existing practice in Region 10 :
- Election for the slate only for position of Chair Elect.
- Incoming Chair would select Secretary and Treasurer or Secretary/Treasurer.
- Amendment passed and comes into force from 2017.
- Updated Bylaws hosted on IC website
- Execom had 1 Telecon 3+1 F2F meetings Incl EGM
- Filing of returns as per statute

Technical & Professional Activities 2016

- **IEEE Interactive Talks:** 1st session organised by IC Young Professionals on 25th of June, 2016, ***Virtual Astronaut Appearance*** with the NASA Astronaut, Sunita L. Williams as the speaker. The event was live with good feedback.

- **AISYWC 2016 AT JAIPUR OCTOBER 7-9:** Hosted by IEEE Delhi Section and was held at LNMIIT, Jaipur, Rajasthan Oct 7-9th 2016. 270+ delegates. Theme "Innovate to Create". Talks, Competitions like SB Info graphics competition, Technical project/poster presentation, best Face book post, etc

- **4TH NATIONAL CYBERSECURITY WORKSHOP @ MUMBAI:** Held at TCS, Yantra Park, Thane on 12 & 13 November, 2016. Eight eminent domain speakers. Over 100 online attendees.

- **INDICON 2016** hosted by IEEE BLR Section 16-18 Dec

- **MV Chauhan** Paper Contest 3 winners out of 6 shortlisted on 5 Dec

Other IC highlights of 2016

Conference Norms and Guidelines on Technical Co-sponsorship: Special norms for conference organisation and guidelines on technical co-sponsorship which require robustness of the technical program committee and care in review of submissions. The guidelines have been hosted on the IC website.

IC Society Chapter streamlining: Ongoing efforts stepped up to streamline and coordinate the activities of the IC IEEE Society Chapters. During 2016, portfolio taken by IC Chair who reached out to Chapter leadership to resolve long pending issues.

Following the IC meeting on 24 July 2016, **new Guidelines on forming new India Council Chapter**(s) have been put up on the website.

New IC Chapter: IC Chapter of IEEE Council on Electronic Design Automation received formal approval on 24 February 2016.

IC **Awards for Sustainable Student Branches** 11 shortlisted: Winners 1st SSN (Madras) 2nd GHRCE (Bombay) 3rd MESCE (Kerala)

IC Women In Engineering: IC WIE closely involved in AISYWC at Jaipur, and R10 SYWL Congress in Bangalore as also WIECON in Pune. **Two events conducted** partially supported by R10 WIE

1. "Spread the Word, for prevention is Better than Cure" in association with IC and GRIET SB (Hyderabad Section)
2. "WIE National Leadership Conference" in association with IC and Sardar Patel Inst of Tech (Bombay Section)

Branding and marketing of the India Council IP: Vice Chair marketing Mr TS Rangarajan, has been working on plans for making the activities of India Council financially sustainable. The aim is to receive a share of the revenue generated by the conference through bringing sponsors together with technical committees. Efforts are ongoing.

India Council Logo formalised: Special Logo for IEEE IC design vetted by IEEE with the help of India Office

Two IEEE Events of significance to members all India, during 2016

1. The **2nd Admissions & Advancement Senior Member elevation panel for 2016 was held on 19 March 2016 in Mumbai** at which Dr JB Cruz, Chair A&A Committee was joined by Ms Fanny Su of Singapore Office and 20 senior members of IEEE Bombay Section. In all the panel cleared 307 elevations. This was the second such meeting in India after the one held a couple of years ago in Bangalore.

2. **IEEE Board India Outreach to Mumbai and Bangalore** (22-26 August 2016) on the occasion of the R-10 Golden Inaugural celebrations at Bangalore on August 24.

Seven members of the IEEE Board led by President Barry Shoop visited Indian Institute of Technology (IIT) Bombay, Society for Innovation and Entrepreneurship (SINE), Larsen & Toubro Group Companies and Tata Group companies in Mumbai. In Bangalore the outreach was to Indian Institute of Science (IISc), TIE Young Entrepreneurs, India Electronics & Semiconductor Association, Intel India Incubation center, Indian Space Research Organization.

Slate and Support from India Office

Slate for 2017: For 2017 the Nominations Committee comprising Dr M Ponnavaikko (Madras), Dr Nirmalendu Chatterjee (Kolkata) and Dr Anil Roy (Gujarat) has nominated Dr SN Singh as Chair Elect 2017. The Slate was displayed on the website on 17 October 2016. No petition was received and accordingly **Dr SN Singh has been declared Chair Elect 2017**.

Liaison with IEEE India Office: Mr Harish Mysore, Director IEEE India Office in Bangalore, continues his close association with the activities of India Council and is regularly present at EC meetings

India Council acknowledges the various efforts of IEEE India Office which have added value to members in India.

A word of thanks….. Sincere thanks to Chair, India Council, Section Chairs,Office bearers of IC IEEE Society Chapters, India Council Vice Chairs, IC Executive Committee Members, Editor IC Newsletter, Webmaster, Expert speakers and other organizers at Events listed above and all of whom made it possible for the Execom to consolidate the statutory compliance and build on the numerous value adding offerings to members in India

Anthony Lobo
Secretary, IEEE India Council

Report on 2017 IEEE Region 10 Annual Meet held on March 4-5, 2017 in Chiba City, Japan

It was my honour and privilege to represent IEEE India Council in the 2017 IEEE Region Meet. The meet Chaired by R10 Director Kukjin Chun was attended by more than 100 delegates including several past R10 Directors. Quite a few IEEE dignitaries attended and addressed the meeting, viz. IEEE President, Karen Bartleson, MGA Vice-President, Mary Ellen Randall and TAB Vice-President, Marina Ruggieri.

On the first day of the meeting, 4th March 2017, Training Workshops were organized in two breakout sessions in the forenoon and Poster Sessions by EXECOM members were held on various IEEE activities in the afternoon apart from transacting regular administrative and financial agenda. Presentations were also made by 50 Years Celebration Committee and Sections Congress 2017 Committee. In the afternoon, a special session with Q&A was held in which President-Elect Candidates 2018, Vincenzo Piuri and Jacek Zurada, took part. The busy day was concluded in a fitting manner by the 50 Year Celebration Dinner.

On the second day of the meeting, 5th March 2017, three knowledge sharing sessions were held in which presentations were made by 2016 R10 Large Section Award Winner, Medium Section Award Winner and WIE Section Affinity Group Award Winner. Reports were presented on TENCON 2016, TENSYMP 2016 and Region 10 Humanitarian Technology Conference (HTC) 2016. Informative presentations were made on TENCON 2017, TENSYMP 2017, HTC 2017, TENCON 2018, TENSYMP 2018 and HTC 2018. 2017 R10 Annual Meeting was formally adjourned at the end of the forenoon session on 5th March 2017.

In the afternoon on 5th March, an exciting sight-seeing tour was conducted to Imperial Palace, Sensoji Temple and Nakamise. The excursion was followed by dinner and music in the evening. The enchanted participants ended the memorable meet with the vow to make IEEE Region 10 stronger in days and years to come.

Report by: Dr. Sivaji Chakravorti, Chair, IEEE IC

Microsoft ending support for decade-old Windows Vista: Microsoft has announced that it's ending support for Windows Vista operating system which was released in 2006. From next month, Windows Vista users will not receive security updates, assisted support options, or online technical content updates. Almost 8% of desktop market share is still estimated to be using Vista's predecessor Windows XP, despite Microsoft ending support for it in 2014.

INDICON-2016

IEEE INDICON conference is an annual event started by IEEE India Council and has been hosted by various sections. This conference focuses on trends in the areas of Computer Science Engineering, Electrical Engineering, as well as Electronics and Communication Engineering.

The 13th edition of the conference, INDICON-2016, is organized by IEEE Bangalore Section during 16-18, Dec 2016 at J.N. Tata Auditorium, IISc, Bangalore.

The 2016 edition of the conference has included, in addition to the areas mentioned earlier, Humanitarian Technology as a new addition.

The highlights of INDICON-2016 include seven keynote addresses, two workshops and one panel discussion session along with paper presentations in parallel sessions, an industrial exhibition and M V Chauhan Student Paper Contest to list a few.

Keynote Addresses:

1. Advances in Indian Space Programmes for Societal Needs and Upliftment by Dr. M Annadurai, Distinguished Scientist and Director, ISRO Satellite Center.
2. Addressing the Challenges of Network of Things (NoT): An Agenda for Research and Development by Dr. San Murugesan, Director, BRITE Professional Services.
3. Convexity, Sparsity, Nullity and all that... in Machine Learning by Prof. Hamid Krim, ECE Dept, NCSU, Raleigh, NC, USA
4. Technology Considerations in Computer Architecture by Prof. Jean-Luc Gaudiot, Fellow, IEEE, AAAS Professor of EECS, UC, Irvine.
5. Advanced Phased Array and Reflector Antenna Systems for 21st Century Satellite Communication Payloads by Dr. Sudhakar Rao, Technical Fellow, Northrop Grumman.
6. Semiconductor Challenges in the Connected World by Mr. Balajee Sowrirajan, Senior Vice President and Managing Director, Samsung Semiconductors India R&D.
7. IoT/Cloud-Based Smart Nanogrod™ for Sustainable Rural Development by Dr. Ashok K. Das, Founder CEO, SunMoksha Power Pvt. Ltd.

Workshops:

1. RF Workshop on Antennas and Advanced EM Modelling
2. IEEE Standards Workshop

A Panel Discussion on “Path Forward for Indian Industry and Academia in Antenna and Microwave Field” included distinguished academic faculty, industry professionals and research scientists.

For the full details of the conference, please visit http://www.indicon2016.in/

Intel buys self-driving tech startup Mobileye for $15.3 bn: American computing giant Intel on Monday acquired Israeli self-driving technology startup Mobileye in a $15.3 billion all-cash deal. This is the world's biggest purchase of a company solely focused on the self-driving sector. Mobileye has teamed up with Intel for its fifth-generation of chips aimed to be used in fully self-driving vehicles scheduled to be launched around 2021.

IEEE Kharagpur Section Annual Report for the Year 2016

Section Office Bearers:

- Dr. Alok Kanti Deb (Chair)
- Dr. Amitabha Bhattacharya (Vice Chair)
- Dr. Chittaranjan Mandal (Secretary)
- Dr. Shailendra Kumar Varshney (Treasurer)
- Dr. Pabitra Mitra (Past Chair)

Section constituent bodies:

- Kharagpur Section
- IIT Kharagpur Student Branch
- HIT Student Branch
- Women in Engineering Affiliate
- Haldia Subsection
- Control Systems Society
- Engineering in Medicine Biology Society
- Signal Processing Society
- Antenna and Propagation and Microwave Theory and Techniques (AP-MTTS) Student Branch Chapter
- IEEE EMB Student Club
- IEEE SPS Student Branch Chapter

Membership:

Fellow – 1; Graduate Student Member – 126; Life Senior Member -- 3; Member -- 120; Senior Member -- 36; Student Member -- 62 and Total -- 348

Major Events:

- Technically Cosponsored International Conference on Systems in Medicine and Biology, Jan 4-7, 2016.
- Technically Cosponsored International Conference on 21st Century Energy Needs-Materials, Systems and Applications, Nov 17-19, 2016.
- Organized **50** technical talks

Major Student and Affinity Group Activities:

- Ubuntu install fest, TechSym 2016, Workshop on Deep Learning, EUREKA – a technical paper presentation event during Kshitij – 2016.
- ROBOTICS, ROBOWAR, Manual Robotics workshop, MATLAB workshop and Virtual Lab workshop.
- Technical talk by eminent speakers; WIE track during TechSym 2016 for paper presentation by women engineers and plenary talk; STAR activity to attract women in engineering profession undertaken in schools around Kharagpur.

Awards:

- Two executive committee members, Dr Sanjay Chaturvedi and Dr Shailendra K Varshney and Dr Santanu Kapat has been elevated to Senior Member grade.
- IEEE R10 WIE award to support WIE track during TechSym 2016,
- IEEE R10 WIE award to conduct STAR activity
- IEEE R10 WIE award to organize R10 50 years anniversary
- Mr Tamoghna Ojha (IEEE Kharagpur section Student Branch Chair, 2015) has been awarded IEEE CS R. E. Merwin Student Scholarship for 2017.

Detailed report at: https://goo.gl/zaCQ2q

Google map to show houses viable for solar roof in US: A map under Google's 'Project Sunroof' will be showing which houses across the US are viable for solar roofs or have enough unshaded area for solar panels. Google uses visual data from Google Maps and Google Earth to generate 3D models of the total sunlight that reaches a roof. Google data says Houston is the city with most solar potential.

Africa gets own domain name 32 years after world's 1st domain: Africa has got its own domain name '.africa' for the continent 32 years after the world's first domain name was registered. The domain name '.africa' will be used to reflect a company's interest in the whole of Africa. According to the World Bank, sub-Saharan Africa has one of the lowest rates of internet penetration in the world.

IEEE Bombay Section Annual Report for the Year 2016

Section Office Bearers:

- Mr. Anthony Lobo (Chair)
- Mr. Abhay Phansikar (Vice Chair)
- Mr. Aiyappan Pillai (Vice Chair)
- Prof. Vinit Kotak (Secretary)
- Prof. Suryanarayana Doolla (Jt. Secretary)
- Prof. Sanjay Pawar (Treasurer)
- Mr. Anand S Gharpure (Jt. Treasurer)
- Mr. Atindra K Banerjee (Immediate Past Chair)

IEEE Bombay Section constituent bodies:

- BOMBAY SECTION
- Computer Society Chapter
- Communications Society Chapter
- AP/ED Chapter
- SMC Chapter
- Signal Processing Society Chapter
- IA/PE/IM Chapter
- MTTS Chapter
- Life Members Affinity Group
- Young Professional AG
- Women in Engineering AG

Membership:

Life Fellow – 5; Fellow – 9; Life Sr Members – 7; Sr Members – 209; Life Member – 7; Members -- 1,714; Assoc. Members – 40; Gr. Student Members – 581; Higher Graduate -- 2,572; Student Members -- 3,690; Total -- 6,262

Section Highlights

- IEEE Bombay Section Signature Conference held in December 2016
- National Leadership Conference held on October 14-15,2016
- Internship and Entrepreneurial Workshops with R10 under the India Strategic Initiative
- 2nd Panel Meeting of IEEE Admissions & Advancement Committee in Mumbai on 19 March 2016 for SM elevation.
- Local Host Section for IEEE Board delegation Visit to Mumbai 22-23 August 2016. Facilitated meetings with Industry & Research institutions in Mumbai : IIT Bombay, TIFR, Tata Group and L&T..
- Local Host Section for 4th National Cybersecurity Workshop organized by IEEE India Council 11-12 November 2016.

Awards:

- 2016 MGA Achievement Award to Dr B Satyanarayana, Technical & Professional Activities Chair
- MGA 2016 Outstanding Branch Counselor Award 2016 to Prof Ms Gejo George, Branch Counsellor of Student Branch of Don Bosco Institute of Technology
- Membership Retention Award to Bombay Section for meeting Section Retention Goals
- Certificate of Recognition received by Mr. Anthony Lobo, Chair, Bombay Section from IEEE Member Recruitment and Recovery Committee for outstanding achievement in member retention for the section during 2016
- Certificate of Recognition received by Mr Aiyappan Pillai, Membership Development Chair, Bombay Section from IEEE Member Recruitment and Recovery Committee for outstanding achievement in member retention for the section during 2016
- Certificate of Recognition as 2016 IEEE Day Ambassador to Prof Shashikant Patil, NMIMS Shirpur and Prof Seema Kawale, SAKEC

Website: http://ieeebombay.org

Detailed report at: https://goo.gl/DCem2B

IEEE Kerala Section Annual Report for the Year 2016

Section Office Bearers:

Chair	Dr. K.R.Suresh Nair
Vice Chair	Dr. Sameer S M
Secretary	Ms. Sarada Jayakrishnan
Treasurer	Mr. Jithin Krishnan
Immediate Past Chair	Mr. Unni Sankar
Immediate Past Secretary	Mr. Sabarinath Pillai
Chair, Malabar Subsection	Dr. Lilly Kutty Jacob
Vice Chair, Malabar Subsection	Dr. Gopakumar A
Secretary, Malabar Subsection	Mr. Rijil Ramchand
Chair, Kochi Subsection	Ms. Mini Ulanat
Vice Chair, Kochi Subsection	Mr. Shahim Baker
Secretary, Kochi Subsection	Mr. Vijay S Paul

IEEE Kerala Section constituent bodies:

- Kerala Section
- Malabar Sub Section
- Kochi Sub Section
- Power & Energy Society
- Computer Society
- IA/IE/PEL Joint Chapter
- Communication Society
- Society on Social Implications of Technology
- Antenna & Propagation Society
- Robotics and Automation Society
- Signal Processing Society
- Engineering in Medicine and Biology Society
- Circuits and Systems Society
- Young Professionals Affinity Group
- Women in Engineering Affinity Group
- Life Member Affinity Group

Membership:

Life -- 13; Sr Members – 120; Members -- 936; Associate Members – 40; Graduate Student Members – 617; Student Members -- 6187; Total --7914

Section Highlights

- A whooping, around 1080 events in one year: almost 3 events per day within the Section.
- ISTAS 2016 - Flagship Conference of IEEE SSIT held at Trivandrum from Oct 20-22, 2016
- IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES 2016) by IEEE IAS, PES, PELS and IES on 14-17 Dec 2016.
- IEEE Job fair. The first ever recruitment drive by IEEE Kerala Section held on 13th & 14th Feb 2016 at Mar Athanasius College of Engineering, Kothamangalam.
- IEEE Day with a State (Section) Wide Torch Relay starting from the northernmost district, Kasargod and ending at the southern district, Trivandrum.
- Shastra Vismaya: A unique initiative by IEEE Kerala Section and the Dept. of Social Welfare, Govt. of Kerala for Abused Children staying in Government Shelter Homes, to Inculcate interest towards Science and its applications.
- International Year of Light to enthuse, educate and elevate the minds of school children at UP, HS & HSS levels covering ~12,600 Schools in Kerala, reaching 1.4 Million students
- Community Engagement Workshop held at Kovalam on 20th – 22nd Oct, 2016.
- Section Internship Program for Student members.
- IEEE Kerala working closer with Government of Kerala
- Six Distinguished Lecture Programs

Awards:

- IEEE Kerala Section : IEEE MRRC Award - 2016 Outstanding Section membership Recruitment award
- Kerala Young Professionals Affinity Group : 2016 IEEE Young Professionals Affinity Group Hall of Fame Award
- Shahim Baker: 2016 IEEE MGA Young Professionals Achievement Award [Industry]
- Richard E Merwin Scholarship - 7 out of 10 for R10 came to Kerala Section
- 2016 Darrel Chong Award to TKM College of Engineering & M A College of Engineering, Kothamagalam
- CEC Chengannur - Regional Exemplary Student Branch Award for Region 10
- MES, Kuttippuram - Outstanding Student Branch Award by IEEE India Council.
- 3 Volunteers (Bibin Parukoor Thomas; Shahul Hameed; and Vijay S Paul) graduated IEEE VOLT Program from Kerala Section in 2016

Newsletter: Published regularly with one print issue annualy

Website: http://www.ieeekerala.org/

Detailed report at: https://goo.gl/4Tnk0p

IEEE Gujarat Section Annual Report for the Year 2016

Section Office Bearers:

Chair	Y P Kosta
Vice Chair	R B Jadeja
Secretary	Manik Lal Das
Treasurer	Haresh Sabhadia
Past Chair	Anil K Roy

Section constituent bodies:

- Gujarat Section
- Joint Chapter of IAS, IES and PELS
- PES Chapter
- Joint Chapter of MTT & AP societies
- Computer Society Chapter
- SPS Chapter
- CIS Chapter
- WIE Affinity Group
- 22 Student Branches

Section Highlights:

- Co-sponsored National Seminar on New Trends in Signal Processing 2016 (NeTSiP'16) during October 20-21, 2016.
- CIS Winter School on Computational Intelligence, March 1-5, 2016, DA-IICT, Gandhinagar.
- Section Students & YP event 'Sampark 2016' on 14th February 2016.
- Emerging Research Trends in Engineering-2016 on 2/12/2016
- IEEE event on Internship & Entrepreneurship Development Program on 12/9/2016
- Robo Soccer - A real time platform for applying Computational Intelligence Workshop on 30/3/2016
- Hackathon on 5/3/2016 & MSP430 Hackathon on 4/10/2016
- Seminar on Industrial IoT on 12/8/2016

Awards & Regognitions:

- 25 teams belonging to 6 SBs from Gujarat Section got placed in the worldwide list of 2146 teams of IEEE Xtreme.
- IEEE student branch NIRMA has bagged prestigious award at International Competition IEEEmadC (IEEE Mobile Application Development Competition) 2016.
- IEEE LDCE student branch Mr. Kartavya Patel has bagged prestigious aware in IEEE MTTS video competition by sharing top honour and prize money of 1000USD.
- Three. Students from ADIT were invited by Hard Tech summit organised by IEEE R 10 young professionals at NTU Singapore on 26th November 2016.
- Leadership positions in India Council: Chair - Deepak Mathur; Treasurer - Anil K Roy
- 2016 Member, MGA Ad Hoc Committee -Geo-Unit Vitality Dashboard project - Anil K. Roy

Detailed report at: https://goo.gl/anFrcF

IEEE Pune Section Annual Report for the Year 2016

Section Office Bearers:
Chair -- Dr Pradeep K Sinha
Immediate Past Chair -- Dr. Rajesh Ingle
Vice-Chair,-- Mr. Girish Khilari
Secretary -- Dr Surekha R Deshmukh
Treasurer -- Prof Mandar Khurjekar

Section constituent bodies:
- Pune Section
- Communication Society
- Computer Society
- PES/IAS Society
- Signal Processing Society
- Instrumentation and Measurement Society
- Women in Engineering (WIE) Affinity Group
- 22 Student Branches

Membership:
Fellow – 2; Sr Members – 41; Life Member – 1; Members -- 352; Affiliate Members – 9; Assoc. Members – 93; Student Members -- 679; Total – 1,177

Section Highlights:
- A tutorial on 'PUNE MODEL: Planning for a Smart City in a Developing country' was presented by Prof GS Mani & Dr Surekha Deshmukh
- IEEE WIE International Summit Pune 2016 on 23rd – 24th Sept 2016
- IEEE International Women in Engineering Conference on Electrical and Computer Engineering (WIECON-ECE 2016) on 19 – 21 Dec 2016
- One of the key organizers of IEEE REGION 10 STUDENT/YP/WIE/LM CONGRESS 2016 (SYWLMC 2016) during 25-27 August 2016 at Bangalore.
- IEEE R 10 student Congress was organized at Pune on 23rd July 2016
- Student Project Competitions (UG and PG)
- Technical Talk Series Lectures
- Problem Solving Workshop
- Conference: ICPC 2016 (28-30 Jan 2016)
- Hands on Session on Matlab, Labview, NS1/NS2
- Essay competition for students, Student Awareness Contest
- Field trip - Industry/exhibition visit
- Rural school visits for community development
- IEEE Xtreme
- Project competition on Signal and Image Processing on 04/07/2016
- Internship and Entrepreneurship Meet
- 22 Society Chapter activities
- International Conference on Internet of Things and Applications
- International Conference on Computing, Communication, Control and Automation-2016 International Conference on Automatic Control and Dynamic Optimization Techniques
- IEEE International Conference on Computing, Analytics and Security Trends

Awards:
- PES/IAS Chapter received HPCP award for its performance in year 2015. The award is worth of US $ 200/-
- Prof Sachin Shelar received a grant of US $ 300/- for membership drive

Website: http://www.ieeepunesection.org

Detailed report at: https://goo.gl/e9K3M1

Researchers successfully hack a smartphone with sound waves: Computer security researchers from the Univ. of Michigan and the Univ. of South Carolina have successfully hacked a smartphone and a fitness band through sound waves. This was made possible by controlling the gadgets' accelerometers by playing specially crafted sounds. Researchers were able to add fake steps to a Fitbit band and play a malicious music file on hacked smartphone

IEEE Kolkata Section Annual Report for the Year 2016

Section Office Bearers:
Chandan K Sarkar - Chairman
Sujit K Biswas - Chairman-Elect
Kesab Bhattacharyya - Vice-Chairman
Sayan Chatterjee - Secretary
Suparna Kar Chowdhury – Treasurer
Debatosh Guha – Imm. Past Chair

Section constituent bodies:
- Kolkata Section
- AP/MTTS Chapter
- CAS Chapter
- CIS Chapter
- Computer Chapter
- COMSOC Chapter
- DEIS Chapter
- EDS Chapter
- GRSS Chapter
- IAS Chapter
- PES Chapter
- Photonics Chapter
- YP Affinity Group
- WIE Affinity Group
- CSS-IMS
- SSCS Chapter
- SIGHT
- 38 Student Branches

Membership:
Graduate Student Member – 625; Student Members – 1250; Total – 3,468

Section Highlights:
- 32 Technical meetings on current interest topics were organized
- Technical support to 34 conferences
- 18 Educational activities
- Nine outreach programmes
- One industry visit
- Three community activities

Awards & Recognitions:
- Received the outstanding section membership recruitment performance award.
- Prof. Debatosh Guha has been conferred IEEE Fellow.
- Prof. Debatosh Guha has been appointed as an Associate Editor of the IEEE Transactions on Antennas and Propagation.
- Prof. Debatosh Guha has been awarded by IETE for one of their highest recognition of "RAM LAL WADHWA AWARD".
- IEEE-IAS Kolkata Chapter once again bagged the prestigious “Outstanding Small Chapter – Continuing Performance” award for the year 2016.
- Ms. Chandreyee Sarkar, Institute of Radio Physics and Electronics, University of Calcutta, is a recipient of INAE Engineering Excellence Award 2016

Newsletter: In electronic form

Website: www.ewh.ieee.org/r10/calcutta

Detailed report at: https://goo.gl/4yfmS9

IEEE Madras Section Annual Report for the Year 2016

Section Office Bearers:

Dr. M.A. Atmanand	Chairman
Dr. N.R. Alamelu	Immediate Past Chair
Mr. H.R. Mohan	Vice Chairman
Dr. N. Kumarappan	Vice Chairman
Dr. P. Sakthivel	Secretary & Treasurer

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Section constituent bodies:

- Madras Section
- Pothigai Sub Section
- Aerospace and Electronic Systems (AES)
- Antennas and Propagation (APS)
- Computer Society (CS)
- Communications (COMSOC)
- Computational Intelligence (CIS)
- Control Systems (CSS)
- Engineering in Medicine & Biology (EMBS)
- Education (ES)
- Electromagnetic Compatibility(EMCS)
- Industrial Applications (IAS)
- Information Theory (ITS)
- Instrumentation and Measurement (IMS)
- Microwave Theory and Techniques (MTTS)
- Nano Technology Council (NTC)
- Power and Energy (PES)
- Power Electronics (PELS)
- Product Safety Engineering (PSES)
- Professional Communication (PCS)
- Photonics (PS)
- Robotics and Automation (RAS)
- SIPCICOM
- Social Implications of Technology (SITS)
- Technology and Engineering Management Society (TEMS)
- Electron Devices – Chennai
- Electron Devices – Coimbatore
- WIE Affinity Group
- Young Professional
- SIGHT
- ADSF SIGHT
- 84 Student Branchest

Membership:

Fellow – 4; Life Sr Members – 12; Sr Members – 196; Life Member – 7; Members – 2,246; Affiliate Members – 21; Assoc. Members – 55; Graduate Student Members – 818; Student Members – 5,188; Total – 8,547

Section Highlights:

- 2016 IEEE MINI POCO (Panel of Conference Organizers)
- IEEE Chennai Hub Congress:
- IEEE Coimbatore Hub Congress cum India Strategic Initiative
- IEEE Day Celebration
- Student Paper Contest 2016
- IEEE Xtreme Programming Competition
- ICT Quiz in five regional centers and a finals
- Eight technical meetings
- 216 SC/AG activities
- 26 National/International Conferences/Workshop/Seminars were technically sponsored
- Two community activities

- Three Faculty Development Programmes
- Student Project Funding
- SB events funding to the tune of Rs. 2.2 lakhs
- Motivational Awards to SBs and Society Chapters and Affinity Groups
- Student Branch revamping initiatives
- R10 SWYL Congress Sponsorship

Awards & Recognitions:

- Prof. M. Ramalatha has received the 2016 WIE Inspiring Member of the Year Award.
- IEEE Foundation has sanctioned a grant of $18, 263 for the project on "Smart Agriculture for Sustainable Food Production".
- IEEE Computational Intelligence Society – Madras Section Chapter has received the Outstanding Chapter Award for the year 2015 under the chairmanship of Dr. N. Kumarappan.
- Certificate of Recognition: The IEEE Member Recruitment and recovery committee recognizes Mr. H.R. Mohan & Dr. N. Kumarappan.
- IEEE Computer Society Madras Chapter of the Madras Section has won the Outstanding Chapter Award for 2015 under the Chairmanship of Mr. H. R. Mohan
- Dr. M.A. Atmanand, Chair, Madras Section was awarded with IEEE Oceanic Engineering Society's (OES) Presidential Award..

Newsletter: IEEE MAS Link published monthly in electronic form and once a quarter as a summary print edition and circulated to members & SBs and engineering institutions

Website: http://sites.ieee.org/madras/

Facebook: https://www.facebook.com/IEEEMadrassection/

Detailed report at: https://goo.gl/Msch7i

IEEE UP Section Annual Report for the Year 2016

Section Office Bearers:
Chairperson – Dr. J Ramkumar
Vice-Chairperson – Dr. Anoop Singh
Vice-Chairperson – Dr. R K Srivastava
Secretary – Dr. Dilip Kumar Sharma
Joint Secretary – Dr. Asheesh K Singh
Treasurer – Dr. Satish K. Singh

Section constituent bodies:
- UP Section
- Roorkee Subsection
- Nepal Subsection
- Electron Devices Society Chapter
- IE/PEL/CS Joint Chapter
- PE/IA Joint Chapter
- Electronics Devices
- Signal Processing/Computer Joint Chapter
- CAS/SSC Joint Chapter
- MTT
- CIS
- WIE AG
- 63 Student Branches

Membership:
Fellow – 2; Sr Members – 122; Life Member – 2; Life Sr Members – 3; Members -- 818; Affiliate Members – 8; Assoc. Members –17; Graduate Student Members – 762; Student Members -- 701; Total – 2135; Roorkee subsection: 337; Nepal Subsection: 40

Section Highlights:

- 25 major events including conf. were technically supported \
- 15 conference/workshop etc have been in technical co-sponsored
- About 140 Professional and Continuing Education Activities
- One of the supporting sections of R10 SYWL Congress

Website: http://www.ieeeup.org

Detailed report at: https://goo.gl/M74TwW

IEEE Bhubaneswar Sub-Section Annual Report for the Year 2016

Technical Activities:

- Prof Arogyaswami Paulraj, Stanford University, USA (Evolution of Mobile Communications))
- Mr Bhartendu Sinha, Auto Grid, India (Big Data & Analytics Integration in Smart-Grid Management)
- Dr Saroj Meher, ISI, Bangalore(An Inevitable Bonding of Machine Learning with Big Data)
- Mr Jnan Dash, USA (Emerging Software Technology & Market Trends)
- Dr. R. Nagaraja, Founder & Managing Director(Smart electricity for smart city)
- Dr. Sanjeeb Dash, IBM T. J. Watson Research Center, New York, USA (Discrete optimization)
- Prof. Keshab K. Parhi,University of Minnesota, Minneapolis (Information Analytics, Energy Efficiency and Hardware Security)
- Dr Amit Mishra, University of Cape Town, South Africa (Cognitive Computing: From Neuron to Brain)
- IEEE Distinguished Lecture Program on Role of HVDC and FACTS in Future Electric Smart Grid by Dr. Ram Adapa, P.E., Fellow IEEE
- Student Colloquium with speakers Prof. A. K. Majumdar, Ex Prof, IIT KGP, Pof. K. R. Srivathsan, IIT BBSR, Ms. Renuka Patnaik, Indo-Korea Science and Technology Center, Bangalore and Dhiraj Choudhary, Fabonix Technologies Private Limited
- Workshop on Smart Grid Technologies

Detailed report at: https://goo.gl/ILz8zW

IEEE Bombay Section Symposium (IBSS-2016)

The second edition of IEEE Bombay Section Symposium (IBSS-2016) was organised as one of the special events celebrating "40 years of Bombay Section" during 20 – 22 December, 2016 at Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering & Technology (VPKBIET), Baramati, a small town located far away from Mumbai.

The theme of the Symposia was "Frontiers of Technologies: Fueling Prosperity of the Planet and People", reflecting well both the Mission and Vision of IEEE. The core topics covered in IBSS-2016 were: Embedded systems, RFID and applications; Intelligence, robotics and machine learning; Internet of Things; Big data processing and Data analytics; and Cloud & Grid Computing

Besides the evening lecture, keynote and the summary talks by distinguished speakers, the Symposium featured 13 high quality review talks in the core topics by senior experts and one contributory talk by a young researcher from the Symposium host. There were two tutorials: (a). Embedded Systems, RFID and Applications and (b). Internet of Things. All the sessions were plenary. Out of the 120 papers received, about 25% were accepted after careful plagiarism checks and refereeing and presented as posters. Best three of them awarded mementos and merit certificates.

The Symposium web page (http://ibss2016.ieeebombay.org/) was a single stop destination for all activities of the Symposium.

Report by: B.Satyanarayana (TPAC), Anand Gharpure (Jt Treasurer), Anthony Lobo (Chair), IEEE Bombay Section

IEEE India Council PES Chapter

National Workshop on Emerging Technologies in Electrical Power Engineering

PES chapter of India Council IEEE conducted a three days' National Workshop on Emerging Technologies in Electrical Power Engineering (NWET-2017) during 16-18, Feb 2017 at Silicon Institute of Technology, Bhubaneswar with a focus on "Present Research trends in Power System Operation and Control".

Dr Sivaji Chakravarty, Director, NIT, Calicut and chair, IEEE India Council PES chapter was the guest of honor.

Eminent speakers in the field of Power Systems like Prof P.K. Dash, Prof A.K.Tripathy, Prof Subhransu Samantaray, Prof Sukumar Mishra , Prof P.K.Hota, Prof Ramaprasad Panda, Prof Abhijit Mahapatra talked on the occasion.

Practicing Engineers K.C Mahapatra, Mr Manoranjan Mahanty and Mr P.K,Patnaik talked on how Power system was managed in Odisha.

Prof Chinmoy Panigrahi and Mr Routh from neighboring KIITs University talked on challenges with grid integration of Renewable Energy.

Participants were from OPTCL, PRDCL, CPRI, OHPC, GRIDCO, IIT and Silicon Institute of Technology, the hosting Institution.

Workshop on "Emerging Trends and Real Time Simulation of Electrical Networks for Smart Grid"

To handle the growing demands of the power systems, various novel technologies have been incorporated in power grid/electrical network system towards achieving the smart grid. To address some of these issues, a one day workshop was organized by Power Systems Division of Central Power Research Institute (CPRI) on 21st Oct 2016 at CPRI Campus at Bengaluru, India.

The theme of this workshop was "Emerging Trends and Real Time Simulation of Electrical Networks for Smart Grid". Dr. Amit Jain, Joint Director and Mr. R. James Ranjith Kumar, Engineering Officer from Power Systems Division of CPRI were coordinators of this workshop.

This workshop was technically co-sponsored by Power & Energy Society (PES) chapter of IEEE India Council. Dr. Sarasij Das from Indian Institute of Science, Bengaluru and Dr. Ilamparithi from OPAL-RT Technologies India Pvt. Ltd. delivered the lectures during this one day workshop.

This workshop focused on Smart Grid, Phasor Measurement Unit (PMU) and Wide Area Measurement Systems (WAMS), Recent Trends in EMS/SCADA systems and Real Time Simulation for Electrical Networks.

About 35 participants from power utilities, academic and research institutes, and industries actively participated in this workshop.

Leonardo Da Vinci combined art and science and aesthetics and engineering, that kind of unity is needed once again. -- *Ben Shneiderman*

National Conference on "Challenges and Issues in Operation of Competitive Electricity Markets"

Restructuring or Deregulation involves unbundling and represents disaggregation of power systems into the basic parts of generation, transmission and distribution from vertical integrated structure. Power Systems Division of Central Power Research Institute organised a two day National conference on "Challenges and Issues in Operation of Competitive Electricity Markets" during 8-9 Dec 2016 at CPRI, Bengaluru. Dr. Amit Jain, Joint Director, Shri P Chandrasekhar, Joint Director, and Shri S. Prabhakar Karthikeyan, from Power Systems Division from Central Power Research Institute were co-ordinators of this National conference

This two day National Conference was technically co-sponsored by Power & Energy Society (PES) chapter of IEEE India Council section.. Thirty five research papers were presented along with two Keynote addresses. Shri Pankaj Batra, Member (Planning), Central Electricity Authority, New Delhi inaugurated the conference on 8th Dec and delivered the Inaugural keynote address on "Evolution of Power/Electricity markets in India". On the second day, another keynote address on "Open access-A key to power market development in India" was delivered. On the last day, a visit to various laboratories of CPRI was also arranged for the benefit of participants.

IEEE India Council PES Chapter

At Silicon Institute of Technology, Bhubaneswar-751024, Odisha

Since 2015 April , the PES chapter of India council IEEE is operational at the Silicon Institute of Technology, Bhubaneswar, Odisha. The past Chairman was Dr R. Nagaraja, M.D, PRDC, Bangalore and was operating from Bangalore. The events report for the year 2015 submitted to region 10 is available at http://pes.org.in/

Events for the year 2016

Meetings of the executive body in 2016: The chapter held three meetings of its executive body in the current year. The meetings were held on 18.05.2016, 22.07.2016 and 8.10 2016. PES members from the institute and neighboring colleges attended the meeting.

Bhubaneswar subsection: Recently Bhubaneswar has become a regular subsection of IEEE under the Kolkata section, and the PES chapter has been recognized. (ref: Approval incident 160823000365). In an executive body meeting of the IEEE Bhubaneswar subsection on 8.10.16 it was decided that the PES chapter of the subsection shall extend full support to the PES chapter of India council.

Technical Sponsorship of events: The Following two events have been granted technical sponsorship:-

1. National conference on challenges and issues in operation of competitive electric market Dec 8-9 -2016 organized by CPRI. Dr. Amit Jail vice chair PES India council is the coordinator.
2. Emerging trends and real time simulation on October 21st 2016 at CPRI. (already held)

Technical co-sponsorship was extended to one day seminar and tutorial held by Dr. Anurag Srivastava from Washington State University at Bangalore. He talked on 'Advances on Power System Operation and Control using PMU'. India Council PES vice chair Dr Amit Jain coordinated the event.

On 8th Oct 2016, PES India Council sponsored a technical talk at Silicon Institute of Technology.

The topic was "*Cryogenics , an uncommon subject for the common man".* The talk was given by Dr Sunil Sarangi, former director of NIT Rourke.

The talk was attended by over 75 participants

Chapter Chair Meet: Prof Ram Prasad Panda, Secretary, PES India Council attended the PES Chapter Chair's Meet at Melbourne during 28-29 Nov 2016. In 2015, Prof A.K.Tripathy Chair India Council PES attended the meeting at Bangkok and the ISGT opening session during 3-4th Nov 2015.

A DLP program by Dr.Arindam Ghosh was initiated by PES Chapter Pune and supported by PES Hyderabad and PES India Council was held in February 2017.

National level workshop in Feb 2017: IEEE PES and Dept .of Electrical and Electronics SIT had organised a National workshop during 16 – 18, Feb 2017 on 'Present research trends in Power System Operation and Control'

AISYWC – 2016
(All India Student Young Professional and Women in Engineering Congress)

AISYWC -- All India Student – Young Professionals – Women in Engineering Congress is the annual hallmark event of the IEEE India Council. Founded in 2000, the AISYWC has grown over the years to become the biggest event on the calendar for IEEE members in India.

It is a conglomeration of inventors, professionals, entrepreneurs, visionaries and some of the greatest minds in the country. By bringing together amazing people from all walks of life, the AISYWC empowers its participants to be inspired, collaborate together and innovate for tomorrow.

In 2016, AISYWC was hosted by IEEE Delhi Section along with IEEE Rajasthan Subsection at
The LNM Institute of Information Technology (LNMIIT), Jaipur, Rajasthan from 7th to 9th October, 2016 on the theme "Innovate to Create revolved around the central idea of the power of ideation and execution"

AISYWC-2016 was planned and executed successfully keeping in mind every requirement of student and Young Professional delegates and was a blend of informative sessions about both, career options and IEEE, technical presentations and discussions. For a detailed report on AIYSWC-2016, pl. visit
http://sites.ieee.org/indiacouncil/files/2017/02/AISYWC16-Final-Report.pdf

Single typo turned some of biggest websites down on Feb 28: Amazon Web Services (AWS) outage that put some of the world's biggest websites like Quora, AOL, and ESPN down on February 28, was caused by a single typing error in code by an employee. The typing error took down a larger set of servers than intended. Amazon systems weren't designed to deal with an error of this magnitude.

Residential house 3D printed within a day at ₹6.76 lakh: Russian startup Apis Cor has 3D printed a residential house within a day at ₹6.76 lakh, making it the first time a house was printed wholly on site, rather than assembled from pre-printed panels. The single-floor house was built using a special concrete mixture, that was used as printing ink. The house-building printer can operate even in temperatures below -35°C. https://youtu.be/xktwDfasPGQ

IEEE Conference on Emerging Devices and Smart Systems (ICEDSS2017)

The IEEE India EDS chapter sponsored IEEE conference on Emerging Devices and Smart Systems (ICEDSS 2017) was held during 3-4, Mar 2017 at Mahendra Engineering College, Tamilnadu, India. A pre-conference tutorial on "Wearable Technologies and IoT" was also held on 3rd Mar 2017.

The conference was chaired by Dr. M. Madheswaran and inaugurated by Dr. A. D. Shaligram, Chairman, IEEE India EDS chapter. Shri. M. G. Bharathkumar, Chairman of Mahendra Engineering College presided over the inaugural function.

Dr. Manoj Sharma, Secretary, IEEE India SSCS chapter, Dr. G. Sadashivappa, Professor-ECE, RV College of Engineering, Bangalore, Prof. Dr. M. Muruganantham, Wollega University, Ethopia and Prof. Dr. Rakesh Vaid, Professor-ECE, University of Jammu were the guests of honor.

Prof. A. D. Shaligram, in his inaugural address enlightened the participants about the present roadmap of Semiconductor industry. The conf. keynote talks included the following:

- Prof. Dr. G. Sadashivappa of RV College of Engineering, Bangalore on "Wearable Technologies for Health care"
- Er. N. Kavitha, Technical Director-STEPS-TI, Coimbatore on "Sensors and Analog front end for Wearable Electronics"
- Shri. T. Pradeep-IIT Madras Research Park on "Systematic approach to build IoT based Wearable"
- Dr . Karthikeyan Ramasamy, Teclever, Bengaluru on "IoT for Control Applications" and
- Prof. Dr. Manoj Sharma-Secretary IEEE India SSCS Chapter, BV College of Engineering, New Delhi on "Wearable Electronics-Scope"

There were 53 papers presented by oral presenters. The prizes were awarded for the Best Paper and Best Presentation in each track. The conference attracted over 150 participants and achieved its objective of bringing together researchers from industry and academia to share and explore research trends in the field of semiconductor electronics and smart systems.

Report by: Dr. M. Madheswaran, Conference Chair (ICEDSS2017)

4-year-old saves mother's life by using Siri to call police: British police have released an audio clip of a four-year-old boy who used Apple's digital assistant Siri to call emergency services and save his mother's life. After finding his mother lying motionless, the boy pressed her thumb to her iPhone's home button to access Siri. Paramedics reached the location in 13 minutes to give the woman life-saving first aid. https://youtu.be/lKCz6v5yb28

IEEE Circuits and Systems Society India Chapter

List of events technically sponsored by IEEE CAS India Chapter in 2016

Sl. No:	Name of the event	Organized by	Venue	Date
1	One day seminar on "Emerging Trends on Wireless Communication"	Dept. of ECE, N.I. University, Thuckalay, Tamilnadu	N.I. University, Thuckalay, Tamil nadu	18/03/2016
2	"Two day workshop on LABVIEW programming environment"	Dept. of ECE & NanoTech, N.I. University, Thuckalay, Tamilnadu	N.I. University, Thuckalay, Tamil nadu	02/09/2016 & 03/09/2016
3	Seminar on: Basics of Timing Analysis/STA in VLSI domain	Dept. of ECE, Bharati Vidyapeeth College of Engineering, New Delhi	Bharati Vidyapeeth College of Engineering, New Delhi	04/10/2016
4	National Conference on "Novel & Challenging issues and Recent innovations in Engineering and Information Sciences- NCREIS 16"	Dept. of CSE and IT, College of Engineering, Kidangoor, Kerala	College of Engineering, Kidangoor, Kerala	19/10/2016 & 20/10/2016
5	National Workshop on Advanced Control, Image and Signal Processing Algorithms	Dept. of EIE, Vimal Jyothi Engineering College, Kannur, Kerala	Vimal Jyothi Engineering College, Kannur, Kerala	05/12/2016 to 10/12/2016

Other Activities

Sl. No.	Event	Venue	Date
1	Annual General Body Meeting	Anandam Buildings, Nagercoil, Tamilnadu	30/12/2015
2	Executive Committee meeting	N.I. University, Thuckalay, Tamilnadu	20/08/2016
3	Annual General Body Meeting	N.I. University, Thuckalay, Tamilnadu	20/08/2016

For the detailed report pl. visit https://goo.gl/YbjWvO

Hawking urges world leaders to keep technology under control: Theoretical physicist Stephen Hawking has urged world leaders to keep technology under control before it destroys humanity. "Technology has advanced at such a pace that this aggression may destroy us...We need to control this inherited instinct by our logic and reason," Hawking said. Humans should identify threats posed by artificial intelligence before the problems escalate, Hawking added.

Google once hired goats to mow its lawns: Google in 2009 hired goats to mow its lawns at their headquarters in California, United States. Under Google's 'low-carbon approach', about 200 goats spent roughly a week eating the grass and fertilising at the same time. Referring to the event, Google's blog stated that the goats were "a lot cuter to watch than lawn mowers".

Indian gets ₹3L for finding bug that allowed free Uber rides: Indian security researcher Anand Prakash has been awarded ₹3.3 lakh by ride-hailing app Uber for finding a bug that allowed users to take unlimited free Uber rides. Prakash received permission from Uber to test the bug in the US and India, where he was able to take free rides. Uber fixed the bug the same day Prakash reported it.

India Electronics Week 2017

IEEE India Council collaborated with EFY group to host this India Electronics Week 2017, a multi-disciplinary mega tech convention with 100+ speaker, 65+ talks and 25+ workshops during 2-4 Mar 2017.

There were over 11,800+ registrations. The event consisted of various EFY conferences and Workshops, Expos like IoTSHOW, LEDASIA, DIY EXPO, Buyers Sellers Meet, Test and Measurement India and more. Major trending topics like profit from IoT, Analytics and AI, Cybersecurity, Smart homes and Smart humans were discussed in the conferences.

The first day events started with the keynote by Dr. Andreas Middendorf from Fraunhofer-Institut für Zuverlässigkeit und Mikrointegration on "Microelectronics for the IoT- often invisible but always indispensable". After which there were 2 parallel tracks on Profit from IoT and Cybersecurity in IoT. There were multiple prototyping workshops were held side by side as well. In the CEO luncheon organized by Fraunhofer , there were over 50 top delegates participated over the networking lunch. Thee panel on "How do IoT startups really thrive in India"was moderated by Kumaran Venkatesh from IESA and other panel on "New age Smart Retailing in Brick and Mortar" moderated by Avinash Kaushik from Revxx IoT accelerator. There was a workshop on "INTERNET OF THINGS: Where does the data go? " by Frugal Labs.

The day two had two keynotes by Venkat Matteela, the chairman and CEO of Redpine Signals and by Milind Hanchinmani from Intel. This was followed by 3 parallel tracks relating to Smart Industry, Analytics and AI and Smart Automotive. The workshops included interesting topics like "How to Integrate voice into your project", "Custom End Node Design- Going behind Arduino", "How to automate your Robot" and many more. The evening keynote was by Dr. Dhananjay Gore, Sr. Director Engineering, Qualcomm India. There was an interesting IoT development Workshop based on snapdragon 410 conducted by Qualcomm. The star speaker for the day was Martin Woolley from Bluetooth Special Interest group and he spoke about "4x Range, 2x Speed! Bringing Bluetooth 5 to India". The best thing that happened was he was very happy with one of the student volunteers from IEEE, Lavanya Narayanan and also posted a tweet about her and the event on twitter.

The last day had two engaging keynotes. First one was by Balaji Kesavaraj from Microsoft and the second was a keynote panel discussion on "Optimally Leveraging Electronics and Digitisation to Transform Manufacturing through Industry 4.0". This was followed by 4 tracks -- Smart homes and cities, Smart Humans, Profit from IoT-II and SMTA. There were amazing set of workshops conducted in parallel which included: "How to build hardware and Software" by Vinay Chaddha; "How to Design using DEFINE framework". There was a talk by Munir Mohammed, Program Specialist – ComSoc and eHealth from IEEE. There were many interesting talks like "Amazon Alexa & Smart Home Skills", "How to add internet to vending machines", "Operating your IoT system securely and profitably" and many others.

The expo which was conducted on all three days attracted a huge number of visitors. The event was supported by a no. of IEEE volunteers who were mainly in charge of the speaker's lounge, workshop area and the conference halls. This gave each one of the volunteers a huge exposure and knowledge about the upcoming technology trends. The main highlight of the event was the two robots in the conference areas which interacted with all the delegates, took their pictures and handed them delegate kits.

The detailed event report with photos can be seen at https://goo.gl/SK9nqQ

Student Branch Officers Meet – 2017

The IEEE Madras Section Student Branch (SB) Officers Meet -2017 was organised on 5th Feb 2017 at the TAG Auditorium, Anna University Campus. About 100 participants comprising of SB Counsellors and SB Officer Bearers from about 70 student branches across the state actively participated in the meet and benefited.

The meet started with the IEEE code of ethics read by Mr. Suriya Thilipan, Section Student Representative. Mr. H.R. Mohan, Chair, Student Activities welcome the gathering and stated that the meet is being organised in the beginning of the year to facilitate the SB officers to get familiarized with the opportunities well in advance and make use of the same and benefited. Further, he stated that combining with the Annual Meeting & Awards Presentation event of the Section will also facilitate the SBs to receive their awards in person. Dr. M.A. Atmanand , Chair, IEEE MAS, in his address, urged the members to participate in various projects, competitions and funding initiatives supported by R10 and HQ and get global recognition. He also stressed the need for the SBs to be active in the context of around 150 SBs been identified (by a sub committee headed by Dr. S. Elangovan.) as inactive and not yet revamped and being recommended to R10 for their closure for not meeting the requirements. Then the programme started with the self-introduction session in which the participants introduced briefly about their SBs and the spelt out their expectations from this meet.

The various sessions of the meet included the following:

- Hands-on session on drafting an annual action plan by Mr. A. Aravindhan
- Highlights on competition & awards by Mr. A. Aravindhan
- Newsletter Reporting & Issues by Mr. M. Arun & Mr. H. R. Mohan
- Websites for SBs using WordPress by Mr B. Ashvanth
- Publishing SB activities on the web using Word and gDrive by Mr. H.R. Mohan
- Tools for Volunteers by Mr. Prasanth Mohan
- India Strategic Initiatives by Mr. Nivas Ravichandran
- IEEE USA Perspective. Innovation & Creativity by Mr. R. Sampath, CEO & MD, BeWo
- Benefits from the Section & India Council by Mr. H.R. Mohan
- SB Funding Opportunities from other IEEE sources by Dr. S. Elangovan
- Highlights on Young Professionals Affinity Group by Mr. Nivas Ravichandran
- Presentations by Select SBs (BIT, Cape Inst, KIOT, KLNCE, Panimalar, SJCE, SSNCE and SXCCE) on their activities and best practices
- Presentations by chairs of COMSOC, CIS and Mr. Mohan on Society Chapters.

In the valedictory and the open discussions session, the queries raised by the SBs in the survey conducted by the Section and during the session were clarified by the OBs of IEEE Madras Section. The participation certificates were presented to all the participants and the meet ended with a group photo session.

The participants had ample time to interact, network with other SB officers and the IEEE Madras Section Office Bearer, Execom members and society and affinity group chairs and explore various avenues for organising events.

This IEEE MAS SB officers' meet was organized by Mr. H.R. Mohan, Chair, SAC with the support of Dr. P. Sakthivel, Secretary cum Treasurer, IEEE MAS and a group of student volunteers with the funding from IEEE Madras Section. All the presentations made during the meet and few select photos are shared in the gDrive of the IEEE MAS Events at https://goo.gl/3nOLFs

Apple to build a floating solar farm in Japan: Apple will build a floating solar farm in Japan to power its component supplier Ibiden's manufacturing entirely on solar energy. The move is aimed at curbing the country's emissions problem. The farm will generate 2.5 billion kilowatt-hours per year of clean energy, which is equal to taking over 4 lakh cars off the road for a year.

National Conference on Disaster Mitigation, Responsiveness and Management

The IEEE Madras Section sponsored two-days national conference on Disaster Mitigation, Responsiveness and Management on the 3rd and 4th of February 2017 was held at Sri Sivasubramaniya Nadar College of Engineering (SSNCE), Chennai. The conference was inaugurated by Dr. B. Venkatraman, Director, Health, Safety and Environment Group, IGCAR, Kalpakkam and Dr. M. A. Atmanand, Chair, IEEE Madras Section and Former Director & Scientist-G, National Institute of Ocean Technology, Chennai. Dr. M. A. Atmanand narrated on how the theme of the conference came into being after the 2015 Chennai floods and stressed the need for academia, industry and the public to come together for effective disaster mitigation and management. Dr. B. Venkatraman provided his views on the theme of the conference and dwelled upon the highly advanced Decision Support System developed in IGCAR. Dr. S. Salivahanan, Principal, SSNCE welcomed the gathering and the conference chair Dr. S. Ramanagopal provided the highlights of the conference sessions.

The conf. had six technical presentations and eleven key note addresses. The speakers included academics, scientists and service personnel from varied backgrounds allowing for the conference to serve as a platform for constructive interaction and amalgamation of ideas. The invited speakers and their sessions include:

- Mr. M. K. Pathak, Scientist E, Research Development Establishment (Engg.), DRDO, Pune, "DRDO Technologies for Disaster Management".
- Dr. P. Mukhopadhyay, Scientist -E, Indian Institute of Tropical Meteorology, Pune, "Potential of High Resolution (12.5km) Global Forecast System (GFS) Model in Capturing Extreme Events over Indian Region".
- Dr. Kaustav Chakravarty, Scientist -E, Indian Institute of Tropical Meteorology, Pune, "Characteristics of Heavy Precipitation Events as Observed over Western Ghat Mountains".
- Dr. A. Boominathan, Prof., Geotechnical Engg. Division, Dept. of Civil Engg., IITM, Chennai, "Geotechnical Aspects for Seismic Resistant Structures".
- Dr. Goudappa Dodagoudar, Prof., Geotechnical Engg. Division, Dept. of Civil Engg., IITM, Chennai, "Probabilistic Seismic Hazard Assessment for Ground Motion Studies at Kanchipuram, Tamilnadu".
- Dr. Saswati Mukerjee, Prof. & Head, DIST, CEG, Anna University, "Cloud Computing for Disaster Management".
- Dr. R. Venkatesan, Group Head - Ocean Observation Systems, NIOT, Chennai, "Advancements in Ocean Observation in India for Tsunami and Cyclone".
- Mr. G. Padmanaban, Senior Manager, Communication & Telecom Infra., L&T Construction, Chennai, "Early Warning Dissemination Systems - ICT Solutions in Practice".
- Mr. Vinoj P Joseph, Assistant Commandant, NDRF, Arakkonam, "Disaster Response & Management".
- Dr. S. Mohan, Prof., Environmental & Water Resources Engg. Division, IITM, Chennai, "Floods & Droughts: Disaster Mitigation Strategies".
- Dr. G. P. Ganapathy, Director, Center for Disaster Mitigation & Management, VIT University, Vellore, "Earthquake Hazards Mitigation & Quick Response during Emergencies".

Bill Gates named world's richest man for 18th time: Microsoft Co-founder Bill Gates has been ranked first on Forbes' 2017 Billionaires list with a fortune of $86 billion, and has been the world's richest person for 18 out of past 23 years. Warren Buffett reclaimed the second slot after two years, while Amazon's Jeff Bezos was ranked third. Further, Mark Zuckerberg has been ranked fifth for the first time.

Indian IT roundup for year 2016

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It is often asked "Does IT matter?" Yes – being the largest creator of jobs in the organized sector for the past 15 years with 4.4 Million direct jobs and annual revenue of $ 220 Billion that accounts for 7.8% of GDP – IT matters a lot for India. A lot has happened in the year 2016 in IT. Here is quick take on what are perhaps the most important developments in IT, particularly from an India perspective. Happy reading!

General: AADHAR enrolment and mobile phone subscriber base crossing 1 Billion mark (in January and March respectively) are truly defining moments for India. The historic **GST legislation** getting 430 (Yes) and 0 (No) in Parliament on September 23, 2016Prime Minister Modi getting recognized (by popular vote) as the **Time Magazine Person of the Year 2**016 in December 2016 and being invited to address both the **US Houses** (Congress & Senate) in May 2016, Modi announcing **de-monetization** on November 8, 2016, India's "**surgical strike**" in Pakistan, Tata Sons sacking Chairman Mistry on Sep 23, 2016 and Brexit (Britain exiting European Union) in June, US Presidential Elections deciding in favour of **Donald Trump** on November 8, 2016 are truly the major events that shaped the world in the year 2016. Many of them including Brexit, de-monetization and US Presidential Elections have direct impact on Indian IT.

Technology: ISRO (Indian Space Research Organization) had a spectacular year in 2016; successful launch of 5th, 6th and 7th of the seven-part "**Indian GPS**" (January to April, **re-usable launch vehicle** test (May), launch of **8 weather satellites** (June), launch of **22 multi-country satellites** (July) and **ScramJet** test in (august) are the notable ones. Discovery of "**gravitational waves**" in February may well be the discovery of the century. **Nokia** succeeds in **1 TBPS fiber-optic communication** trial (September). Chinese **TaichuLight** with 93 pets-flops is the new world record in **super computing** (June). **Solar plane** completes the global tour (July). **Hyper Loop** CEO visits Bangalore and talks of such service for commercial deployment in India!

Markets: With **Quess** (Bangalore headquartered IT and HR services), **TeamLease** (Bangalore-based staff augmentation services) IPO getting oversubscribed 144 times and 65 times respectively; **QuickHeal** (Virus software), **InfiBeam** (e-com) having a good IPO, it was an interesting year for Indian **IPO story**.**De-monetization** helping e-wallets companies including **PayTM**, the year 2017 will be even more interesting. **IBM** buying **Sanovi**, **Intel** buying **SoftMachines** and **Nervana**, the Indian tech start-ups and start-ups by Indians in USA continue to excite. Globally, **Microsoft** acquiring **LinkedIn** for $26 Billion, **Softbank** buying **ARM Holdings,** – the global semiconductor leader – for $31 Billion, **Siemens** buying **Mentor Graphics** and **Verizon** buying **Yahoo** for $ 4.8 Billion are the major global acquisitions. **Wipro** creates a record with its acquisition of xxx for $ 500 Million in September 2016

Products: **Microsoft** launching **Surface 4 Notebook** (January) and **Surface All-In-One Desktop** (October), **Google** launching **Pixel** phone targeting Apple iPhones, video-conferencing software **Duo** (September) and AI-based Assistant **Allo** (October), **Apple** launching **iPhone 7** and **7Plus** along with **Apple Watch 2**, **MacBook Pro** and **OS 10** were the major product launches globally. **BlackBerry OS** becomes history. **Samsung** Note 7 crash causes a lot of misery to Samsung in the year 2016.

Indian IT companies: With IT services industry landscape changing in a major way these are difficult times for the Indian IT services majors – TCS, Cognizant, Infosys, Wipro, Tech Mahindra and HCL with recruitment of fresh university graduates significantly down and growth rates and profitability declining; yet, **TCS** with $ 16.54 Billion turnover (on March 31, 2016) did the country proud with declaring TCS as the most valuable IT Services company in the globe (January). **HCL** acquired Volvo's IT Arm (February). E-commerce major **Flipkart** crossed 100-Million user base. Accounting software **TALLY** crossed one million user licenses. Online travel startup **Yatra** got listed on NASDAQ (December). **PayTM** adds 2,00,000 subscribers a day (post November 8, 2016). Reliance thru their **Jio** service creates several world records; acquires 50 million customers in the shortest time (83 days), carries the highest Internet traffic of 16,000 TB in a day. **Jio** announces free voice and data for the first 90 days (extends by another 90 days).

MNC IT companies in India: **Amazon** starting 6 data centers and 5 fulfilment centres in India, **QUALCOMM** signing up for 500,000 sq-ft space in Bangalore, **Uber** taking up 200,000 sq-ft space in Bangalore, **Apple** announcing tech campuses in Hyderabad and Bangalore, **Wal-Mart Lab** starting Bangalore operations, the Indian IT talent story continues to be exciting from a global perspective in the year 2016. **Netflix** starting their services in India, **Cisco** deciding on Pune for manufacturing and **Huawei**, **LeEco**, **Xiaomi** deciding to manufacture phones in India the Indian market is becoming attractive to global majors too, Make in India, Digital India, Smart Cities and other Mission-mode projects of the government are getting their due global attention too.

Infrastructure: **Auction** for **4G Telecom licenses** concluded in a transparent manner (unlike the scam dominated 2G / 3G spectrum auctions earlier) in 2016, though the yields to the government fell way short (mere 4%) of the target. The new generation telecom operator Reliance **Jio** creating several world records is truly the "talk of the town" globally in the year 2016. **Ooty** became the **100th Railway Station** to get **free Wi-Fi** in December 2016; this is through a partnership between Railtel and Google that plan to roll out free Wi-Fi in 400 Railway stations by 2018.

Interesting Applications & Mobile Apps: De-monetization announcement of November 8, 2016 took e-wallet Apps like **PayTM** to dizzy heights; suddenly every Bank started aggressively marketing their mobile App; **PayTM App** could convert any mobile phone into **PoS** too; government launched **AADHAR Pay App** on December 25, 2016 that enabled any merchant with smart phone and finger-pint reader (costing just over Rs 5,000) to accept payments from anyone direct from their bank accounts and authenticated through biometric signature (needing no credit / debit card, phone, password or MPIN). NPCI-designed **UPI** (Unified Payment Interface) launched in September is set to change the landscape of mobile payments. Ola / Uber, SBI, Indian Post and many others are launching many creative solutions too in the payment space. **GSTN** (GST Network) is being built, that too on new architectures, at record speed. Government is giving a major push to make government purchases transparent and efficient through Government's internal e-com platform **GEM** (Government e-Marketplace) that is available for all Central / State Governments / Public Sector corporations. Reliance **Jio** is the most downloaded App in the planet in November 2016. Even telecom regulator TRAI launched an App that helps end users to monitor Internet speed!

Startup scene: Starting with the start-up policy of the Government in January with Rs. 10,000 Crore fund, the year saw many interesting developments! For the first time in India, Apple acquires Hyderabad-based AI Company "**TupleJump**". Companies started by first generation Indians get acquired for large sums by global leaders (Intel acquiring "**Nervana**" for $ 400 Million and "**SoftMachines**" for $ 300 Million, IBM acquiring "**Sanovi**", for example). **FlipKart** reaches 100 Million users. Facebook Founder **Zuckerberg Foundation** invests in tutoring startup "**Baijus**"; **PayTM**, **Freecharge** and other e-Wallet companies making it big. It was truly a Startup year!

People: TCS veteran **Abidali Neemuchwala** moves to Wipro as CEO in 2016; with **Kritika Reddy** of Facebook moving back to US, **Umang Bedi** takes charge as Facebook India **Head;** CEO's of **Apple, Google, IBM, LinkedIn, Microsoft, Oracle** and **Uber** visit India in the year 2016. **India-born Nikesh Arora steps down as President of SoftBank in June 2016. French President Hollande** was the Republic Day Chief guest in Jan 2016. **UK Prime Minister Theresa May** visits India in November.

Some interesting numbers: The year saw many interesting milestones getting crossed; notable among them include Indian mobile phone customer base and **AADHAR** enrolment crossing the billion mark. **TrueCaller** user base in India crossed 100 million. **LinkedIn** Indian user base crossed 100 million. **Flipkart** user base crossed 100 million and its Day 1 of Billion Sales Day crossed Rs. 1,400 Crores on October 4. *Globally*, **Apple** sold its billionth iPhone in this year. **WhatsApp** user base crossed 1 Billion. **Uber** rides crossed 2 billion in the year 2016

Truly, the year 2016 was exciting for India and IT. The next year may well turn out to be a watershed year for India!

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Man takes 9 hours to read Amazon Kindle terms and conditions: Australian consumer advocacy group Choice has released videos that show a hired actor spending 8 hours and 59 minutes to read the complete terms and conditions of Amazon Kindle. The e-reader's terms and conditions are 73,198 words long. The group has encouraged viewers to sign a petition demanding that such contract agreements should be easier for consumers to read.

Startup makes ₹23,000 smart bag to freshen up dirty clothes: A Los Angeles-based startup has developed 'Paqsule' smart bag priced at ₹23,000 which claims to use UV light and activated oxygen to freshen up dirty clothes. The process can be activated through a button or remotely via a connected smartphone app. Paqsule claims a battery life of 72 hours and can also be used to charge smartphones

IT in January - February 2017

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Highlights in general

- **ISRO** does India proud with 105 satellites launched in one go on February 15, 2017
- **US President** Donald Trump takes charge on Jan 20, 2017
- **Union Budget** presented with two innovations - February 1 instead of February 28; Railway Budget & Main budget merged
- TCS CEO N Chandrasekaran assumes charge as **Tata Sons Chairman** on February 21, 2017
- **Elections to five Indian States** – UP, Goa, Punjab, Uttaranchal and Manipur announced on January 4, 2017; five stage Elections stretch till March 8, 2017; all results on March 11, 2017

Products

- Iconic **Apple iPhone** completes 10 years in January 2017
- **HMD Global** (the new owner of Nokia brand) announced **Nokia 6** Android phone initially for the Chinese market on January 8, 2016 in CES (Consumer Electronic Show) in Las Vegas; launches **Nokia 3, 5, 6** and the nostalgic **Nokia 3310** (that sold more than 200 million units, the largest for any individual handset) in MWC (Mobile World Congress) in Barcelona on February 26, 2017
- **Bharat QR** launched on February 20, 2017

Markets

- **Apple** market capitalization reaches $ 700 billion on February 13, 2017; **Apple** at No 1 and **Google** at No 2 are the most valued companies today
- **Cisco** acquires India-born IIT Delhi Alum Jyoti Bansal founded **AppDynamics** for $ 3.6 Billion on January 24, 2017
- Voice recognition leader **Nuance communications** acquires Delhi-based **mCarbon** on February 8, 2017 for estimated $ 36 million

Indian IT Companies

- **TCS** sets a new record - $ 1 Billion quarterly profit in September - December 2016 quarter; TCS CEO N Chandrasekaran takes charge as Chairman of Tata Sons (the largest private enterprise in India with more than $ 100 Billion annual turnover and globally respected)
- **Airtel Payments Bank** starts All India operations on Jan 12, 2017

MNC's in India

- **Ness Technologies** to add 800 coders in 2017
- Storage technology leader **NetApp** announces Rs 1,000 Cr investment in Bangalore in February 2017
- **Boeing** R & D Center in Bangalore to get further investment
- **HP** acquires **Naira** – founded by India-born Sriram Ramachandran and Prasad Palkar, who were earlier part of Aruba, now a HP company – that uses behaviour-based machine learning for cyber security analytics - on February 1, 2017
- **Truecaller** starts India Development Centre in Bangalore on February 21, 2017
- **Mercedes Benz** launches the first "Made in India" car on February 28, 2017 by launching its E Class Sedan

Education & Research

- **Infosys Science Prize** award ceremony was held on January 7, 2017
- **Five new IIT's** (Dharwad, Palakkad, Tirupati, Bhilai, Goa) get their Directors (Professors P Seshu, PB Sunil Kumar, K N Satyanarayana, Rajat Moona, BK Mishra respectively) in January – February 2017

People

- TCS CEO **Chandrasekaran** takes charge as Chairman of India's largest business house **Tata Sons** on February 21, 2017 creates maximum buzz
- Google CEO Sundar Pichai visits India in January 2017
- **Microsoft CEO Satya Nadella** visits Bangalore and announces exclusive deal on Azure for the Indian e-commerce major FlipKart on February 20, 2017
- **IBM India MD Vineetha Narayanan** is elevated as Chairman; **Karen Bajwa** (ex Microsoft India MD) is the new MD effective January 2017
- **Justice Kher** takes charge on January 4, 2017 as the 44th Chief Justice of India
- **Anant Maheshwari** is the new Microsoft India Chairman effective January 2017
- **Rajesh Gopinathan** is the new **CEO** and **NG Subramanian** is the new **COO** of **TCS** effective February 21, 2017
- India-born **Ajit Pai** is the new head of **FCC** (Federal Communications Commission) in USA

Telecom

- **Airtel** removes national roaming charges on February 27, 2017 and appeals to international community to drop international roaming charges
- **Tata** and **DoCoMo** decide to settle the long pending issue with $ 1.2 Billion out of court settlement on February 28, 2017

Startup scene

- **PayTM** (mobile wallet company with Payment Bank license) crosses 200 million wallets and more than half a million users a day in February 2017
- **Snapdeal** announces massive job cuts on February 23, 2017
- **Stayzilla** shuts shop on February 23, 2017

Interesting applications

- **PVR Pictures** introduces **theatre-on-demand** service

Interesting numbers

- **PayTM** had Rs 5,000 Crores worth transactions and 200 million transactions in January 2017; with 192 million customers it is just 10 million short of SBI!
- **Delhi Airport** handles more than 50 million passengers during January - December 2016 with 15 million of them being International; together with Mumbai, the two airports carry 2/3rd of Indian Air traffic!

Professor Sowmyanarayanan SADAGOPAN is the Director of IIIT-Bangalore. These are his personal views. He has been writing about IT in India for more than decades, with monthly columns in Times of India (1999 – 2003), Financial Express (2004 - 2007), IT Magazine (2008 - 2011) and IEEE India Newsletter (2012 - 2015). He can be reached at ss@iiitb.ac.in

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Dubai launches world's fastest free airport Wi-Fi: Dubai Airports, which manages both the Dubai International and Al Maktoum International airports, has launched the world's fastest free Wi-Fi service across its terminals with speeds up to 100 Mbps. Called the 'WOW-Fi', the service provides Wi-Fi speed about ten times faster than many households have in the UAE. Free unlimited Wi-Fi at Dubai airports was launched in December 2016

Google's new US campus to keep cafes, stores open to public: Google's new US campus, the first built by Google from the scratch, will allow people inside the building without any approval and let them access retail stores and cafeterias made for Google employees. Scheduled to be completed in 2019, the 18-acre campus includes a two-storey building with glass walls and a canopy-like roof of solar panel tiles.

Google's new algorithm shrinks JPEG files by 35%: In order to make web pages load faster, Google has created a new open-source JPEG encoder that reduces the file sizes of JPEG images by 35% while maintaining picture quality. The new encoder is called 'Guetzli' which means a 'cookie' in Swiss German. Earlier, Google made several other projects to reduce image sizes on the web, including Zopfli and WebP.

US ally uses ₹20 crore missile to shoot drone worth ₹13,000: A US ally used a Patriot missile costing ₹20 crore to shoot down a store-bought quadcopter drone worth only ₹13,000.

Information Resources

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Seven sci-fi predictions about robots that came true: They are everywhere. In our homes, our bags and our pockets. Not the mechanical humanoid robots the science fiction author Isaac Asimov wrote about over 70 years ago, but the powerful AI of the silicon chips that are in everything from mobiles and laptops to fridges and cars and children's toys. And this is what Asimov was really driving out: the essence of robots is their brilliance and speed, their reliability and ability to outperform human beings on so many levels.When I reread I, Robot before writing the drama serial, I was really struck by how Asimov's predictions were coming true right now. It's not that he described specific bits of technology, it's that he foresaw the moral, emotional and intellectual dilemmas that AI and the robotics age are forcing humanity to grapple with. https://goo.gl/YDMoeI

Facebook artificial intelligence spots suicidal users: Facebook has begun using artificial intelligence to identify members that may be at risk of killing themselves. The social network has developed algorithms that spot warning signs in users' posts and the comments their friends leave in response. After confirmation by Facebook's human review team, the company contacts those thought to be at risk of self-harm to suggest ways they can seek help. A suicide helpline chief said the move was "not just helpful but critical". The tool is being tested only in the US at present. https://goo.gl/Ywdt6T

Ethics and Engineering: A Matter of Trust: In the December 2015 issue of IEEE Technology and Society Magazine (IEEE T&S), 2015-2016 Society on Social Implications of Technology (SSIT) President Greg Adamson discusses Improving Our 'Engineering-Crazed' Image. Adamson opens his message with a mention of the recent VW environmental deception debacle, and the rift that such events create between the engineering community and the general public. "In addition to the anticipated financial impact on the company," Adamson writes, "it is a setback to the credibility of technologists, one that brings ethics to the fore." Adamson insists that, in situations such as these, an engineer's primary loyalty should be to public interest, and not his or her employer. Below, Adamson expands upon his IEEE T&S article, and discusses in more depth his opinions on engineering and ethics. https://goo.gl/nl71gN

Cool Engineering Projects: Engineers are working to change life for the better in ways that we can hardly even imagine. Check out some of the cool ideas they are bringing to life. The Hyperloop—Travel Faster than a Jet?; Human Exoskeleton—Freedom from Wheelchairs; The Makani Energy Kite—Generating energy at 1,200 feet; The HoloLens—Say Goodbye to Computer Screens; and Solar Sunflowers—Powering a House Near You. https://goo.gl/rQruqi

10 breakthroughs that will greatly improve phone batteries: There's nothing worse than seeing your phone's battery percentage meter drop below 20 percent, and it usually only happens when you need it most. Batteries haven't seen much love in the last couple decades, especially compared to the tech they power, but that doesn't mean there's nothing new on the horizon. We've been talking about cool ways the battery and charging methods are gradually improving for a while. Here's a rundown of all the most exciting new developments, which may make that low battery warning less of an annoyance in the future. https://goo.gl/CZ5mzl

Your Guide to Building Great Apps: (whitepaper from Microsoft): Visual Studio 2015 helps you turn great ideas into great business applications. Our flexible cloud platform and enterprise-scale DevOps tools make it easier than ever to create scalable, state-of-the-art business applications for any platform—web, mobile, cloud, or on-premises. Create stunning apps for Windows, Android, iOS, and the web with the powerful integrated development environment of Visual Studio. Collaborate in the cloud with version control, agile, continuous delivery, and app analytics using any language, targeting any platform. https://goo.gl/OvdMwT

12 Algorithms Every Data Scientist Should Know: Algorithms have become part of our daily lives and they can be found in almost any aspect of business. Gartner calls this the algorithmic business and it is changing the way we (should) run and manage our organizations. There are all kinds of algorithms and for each aspect of your business, there are different algorithms, which nowadays you can even buy at an algorithm marketplace. Algoritmia provides developers with over 800 algorithms in the fields of audio and visual processing, machine learning and computer vision, saving developers precious time and money. However, the algorithms available on the Algoritmia marketplace might not be suitable for your particular need. After all, for different circumstances you require different algorithms and the same algorithm in a different environment can produce different results. In fact, there are many different variables that determine which algorithm to be used and how the algorithm will perform. These variables include the type and volume of the data, the industry the algorithm will be applied to, the application it will be used for etc. https://goo.gl/pT3d98

The 10 most popular Internet of Things applications right now: Needless to say that the current hype around the Internet of Things (IoT) is huge. It seems like every day a new company announces some IoT enabled product. And with it some (biased) prediction of where the market is going. Instead of making yet another biased prediction, we measured what the really popular Internet of Things applications are right now. And the analysis paints a pretty clear picture: Smart home stands out as the most prominent IoT application. https://goo.gl/9h44Jt

Guide to IoT Solution Development: This white paper uncovers major challenges during Internet of Things implementation projects. Find out key learnings from initial pilot projects along the 5 phases of IoT solution development, including a high-level comparison of major IoT solution vendors. The highlights of this guide available for free free download at https://goo.gl/btCZwB include:

• A comparison of 8 major IoT vendors along 15 components of an IoT solution.
• Key learnings from current IoT projects.
• 5 phases to structure your IoT solution development effort.
• 3 Deep dives on crucial IoT aspects: security, interconnectivity, and manageability.
• A detailed IoT case study highlighting the project approach and specific challenges.
• Cross-industry focus on Manufacturing, Energy, Retail and Healthcare but applicable to all IoT segments.

Resources for Teachers & Parents: There are a number of resources available to teachers to help expose students to power and energy engineering. Here are some of our favourites:

- TryEngineering.org — Lesson plans, games, educator resources, career counselor resources, outreach
- IEEE.org Educational Resources — Lesson plans, IEEE outreach volunteer training programs, community service programs, brochures, educator resources, outreach
- Engineering, Go For It - Lesson plans, engineering newsletter, educator resources, outreach
- IEEE eMeritBadges.org - Pre-University Educational Resources — Lesson plans
- IEEE PES Interactive Lessons and Applets — Interactive modules illustrating power use and the power grid
- Junior Engineering Technical Society — National engineering competition for pre-university students
- Get Into Energy — Career counselor resources and outreach resources
- Discover Engineering — Listing of international engineering competition and outreach events

Smart Cities White Papers: New white papers from IEEE Core Smart City Kansas City, Missouri, USA are now available for download. These papers are from the IEEE Smart Cities Kansas City Kickoff Workshop, held 8-9 February 2016 in Kansas City, MO, USA. https://goo.gl/rZjxF0

Scientists store movie and entire operating system on DNA: Columbia University scientists managed to store a full computer operating system and a short film among four other files on DNA molecules and were able to retrieve them error-free. Converting the files into genetic code to store them in the DNA, scientists said, a single gram of DNA could pack over 215 million GB of data for thousands of years. https://goo.gl/6kPtPb

How to become a Bug Bounty Hunter: Anyone with computer skills and high degree of curiosity can become a successful finder of vulnerabilities and get recognised as well as rewarded. You can be young or old when you start You need to keep learning continuously. https://goo.gl/GJoo6w

Governments and nation states are now officially training for cyberwarfare: An inside look: Europe, Canada, USA, Australia, and others are now running training exercises to prepare for the outbreak of cyberwar. Locked Shields is the largest simulation and we take you inside. https://goo.gl/ODJ5De

Watch out for these 8 workplace bully personality types: Workplace bullies have always been on the scene. But they're now being recognized as productivity killers and potential legal threats to employers. Some researchers claim one in every three employees will experience bullying at work. And the experts say bullying costs businesses more than $200 billion a year due to decreased productivity, increased absenteeism and high turnover. https://goo.gl/ffJtMj

Engineering Education in India: The Malady and the Remedy

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1. PREAMBLE

Where is Engineering Education going in India? Does it move in the right direction? Why is it that a study by Aspiring Minds [July 2016] reveals that only 7% of all Engineering Graduates are employable? What happened to the erstwhile pride, prestige, prerogative and popularity of pursuing Engineering Degree Programmes? Are we taking steps to reverse the degradation that occurred in the past 2 decades? This article attempts to analyze the causes leading to despair in Engineering Education and suggests some remedial measures to be urgently implemented to save Engineering Education in India and redeem the lives of the young Engineering Graduates, numbering 1.5 million per annum.

2. THE GENESIS OF THE MALADY

The rot begins in primary education. The all-pass rule up to VIII Std. has become a convenient excuse for teachers and the taught to stop learning. This rule has caused havoc and irreparable damage to the young pupils; it has enabled them to move up to IX Std. without knowing even alphabets of English and the local language. Proficiency in languages and skill in mathematics have taken a severe beating. We have many graduates who cannot even write their names or degrees correctly. They have neither a grasp of mathematical concepts nor a grip in grammar, as they enter IX Standard! To add to the malady, many schools do not teach IX and XI Std. syllabus, as there are no Board exams, but teach X and XII Std. syllabus twice instead. This malpractice deprives the pupils of fundamental knowledge and leads to the memorizing of the subjects, including mathematics! In the matriculation exams, the question papers are diluted to pass all candidates with only memory and no real knowledge, critical thinking or practical application of knowledge.

Less than 10% of the schools train their pupils in soft skills, which are so important for employability. As the entrance exam for entering Engineering Education has also been conveniently dropped in many states including Tamilnadu, the students admitted into Engineering Colleges are not prepared for the pursuit of Engineering Education. They neither know languages well nor the rudiments of mathematics!

How could Engineering Education, that is characteristically mathematics based, be imparted to them in English? Such despicable conditions prevailing across the country reduce the quality of the input to Engineering Education and therefore adversely affect the quality of the output [Engineering Graduates].

3. THE TEACHING & LEARNING PROCESS IN ENGINEERING COLLEGES

As a student enters I BE/BTech in an Engineering College, he is at a loss to understand what goes on. Many students ask the teachers to teach in the local language, as English is not understood. It is a pity that many students coming from the so called English medium schools also do not understand English! The teachers generally yield to such requests, as many of them are also poor in English! The result is disastrous; till final year [BE/BTech], the skill in English language is not honed and they become unemployable!

The lab experiments in Physics and Chemistry form part of the curriculum in X and XII Stds. The lab classes are seldom conducted properly, but in the final exam every candidate is passed with a high score [49 or 50 out of 50!]. With this poor training and false marks, as they enter Engineering Colleges, the miserable trend continues! Most students are not interested in understanding the experiments, as here also they are passed with high percentage, in spite of absence of practical skills. The practical training that is very important for a successful engineer, is ignored.

Final year projects are introduced in the curriculum to encourage hands-on training, practical skills, trouble shooting skills and innovation. Most companies question the candidates in the job interviews about the final

year projects. Project exams have also been diluted and all the above purposes defeated, by passing every student with high percentage of marks, in spite of their ignorance about their own projects.

Tagore said, "Where the mind is led forward by Thee into ever widening thought and action (theory and practice), Into that heaven of freedom, my Father, let my country awake!" A philosopher seems to know the principles of Engineering Education, more than our politicians and the ever subservient academicians! This is in consonance with the idea of Plato, who said 2500 years ago, that only philosophers are fit to rule a country; if the rulers are not philosophers, they should be trained as philosophers, for the welfare of the country, he said.

Many Engineering Colleges (nearly 40% of the 656 ECs in Tamilnadu) do not conduct the lab classes at all! So we get ECE I Class graduates who cannot handle an oscilloscope; CSE I Class graduates who cannot write a programme in C++ ; EEE I Class graduates who are unaware of solid state drives and Civil I Class graduates who cannot distinguish between different types of foundation! Many universities in India have the practice of adding grace marks in written exams to fictitiously boost the pass percentage. The students pass in exams and fail in life! For example, Anna University in Tamilnadu adds 30 to 40% marks in most analytical subjects to boost pass percentage! It is difficult to find such malpractices elsewhere in the world! No wonder that the Engineering Graduates in India become unemployable. Is there any other country in the world where 93% of the Engineering Graduates are wasted every year? However, the Indian students are very intelligent and trainable. The educational system is at fault.

When the AICTE insisted on ME/MTech qualification for teaching in Engineering Colleges, these were obtained without even attending any ME/MTech class, due to a nexus between the ECs and the Universities! Such candidates with no knowledge or skill developed at the BE/BTech or at the ME/MTech level, are now masquerading as great teachers in ECs! Most managements of ECs have only a mercenary approach and are least bothered about releasing unemployable Engineering Graduates every year into the job market, causing several serious social problems. The erstwhile CM of Tamilnadu, Honourable C N Annadurai, once said: "Unemployed graduates are on every roadside, with their minds full of sinister designs, indicating for the future, ominous signs!" This is already happening now; many unemployable
graduates, including engineering graduates, are indulging in every type of criminal activity.

4. WHAT ARE SCIENCE, ENGINEERING AND TECHNOLOGY?

There is a widespread lack of understanding of the terms Science, Engineering and Technology. Science is the origin and the elixir of knowledge. It contributes to fundamental knowledge, the truth. Engineering is the analysis, design and the synthesis of the postulates in science, to benefit mankind. This needs analytical skills, design skills, mathematical modelling of physical tools, and skills of interpretation of test results. Technology is to develop tools using engineering skills and theoretical concepts, to manufacture the tools and to use them for 'the onward march of the human race'. What makes a wholesome engineer? Only the expertise in science, engineering and technology together can bring about a wholesome engineer. We have several comparative sets of activities that work if they are together and fail if separated:

Science	Engineering	Technology
Lecture	Tutorial	Practical
Goal	Team	Product
Truth	Thought	Action
Literature	Music	Dance/Drama
Meditation	Yoga	Medicine
Man	Woman	Children

Without practising practicals and effective tutorials combined with inspiring lectures instituting fundamental concepts and truths, it is impossible to bring out wholesome employable engineers.

5. SUGGESTED REMEDIAL MEASURES

1. The draconian 'All Pass Rule' should be scrapped from the primary and secondary schools. This has led to unwritten 'All Pass Rule' in Engineering Colleges for practicals and projects.
2. Languages and Mathematics should be taught by well trained teachers in schools, inspiring and creating interest in the minds of the pupils.
3. Practicals should begin in schools and taught well; the practical exams must be conducted strictly, permitting failures.

4. There must be an Entrance Examination for entry into Engineering Colleges; it should include testing of English as well. Candidates scoring less than 40% in the Entrance Examination should be disqualified for admission into ECs. This is being implemented in Kerala State already.
5. The grace marks should be abolished in all exams of Engineering Colleges, as suggested by the T S R Subramaniam Committee framing the National Policy on Education.
6. The engineering students should not only pass their university examinations, but should also pass the GATE Exam conducted by the IITs before they are conferred the BE/BTech degrees. This will ensure quality and uniformity in the engineering degrees across the country. Steps should be taken to protect and endure the credibility of the GATE Examination system.
7. Education must continue in the concurrent list, to have a check and balance.
8. Enough funds, about 6% of GDP, should be allotted to education, with effective monitoring of its utilization.
9. 'Teachers in ECs must undergo frequent training to give effective teaching and to inspire students; this is the respect to be given to students; every student should be respected', says the new VC of B S Abdur Rahman University, Chennai, Dr. Sahol Hamid Bin Abu Bakar, hailing from Malaysia. Given the poor background of the teachers, the frequent training becomes the desideratum of the day.
10. Who are the real Teachers?

"Those who fondly care,
For the students' own welfare,
Who can teach with flair,
And inspire beyond compare,
Are real Teachers, but rare;
Others, not becoming, beware!"

6. CASE STUDIES

A III BTech Computer Science female student from IIT, Mumbai was taken as an intern in 2015 July to work in Facebook, California. She made innovation in data collection within 2 months to the pleasant surprise of the Facebook engineers. She was asked to join Facebook on completion of her BTech degree; the salary offered was Rs. 2.1 Crore/annum!

A III BS Computer Engineering student by name Mithun from the University of Illinois at Urbana Champaign [having a sprawling 1783 acre campus with 33,368 UG students and ranking 44] worked as an intern in July-Aug 2015 at INTUIT Corporation, California. He developed a new Mobile App in a short time and was offered a job at $100,000/ annum. After completing his IV year BS , he joined CISCO at about $150,000/annum. Such is the demand for practical skills and new designs.

When I visited Arasan Ganesan Polytechnic, Sivakasi in 2014, the Principal Mr Nandakumar claimed that all their students get placed in Gulf countries, although they enter the Polytechnic after X Std. almost as illiterates! The secret is in giving them practical skills for all the 3 years in their Diploma Course.

7. CONCLUSION

The above case studies emphasize the importance of training in practicals and developing an attitude for practical application and innovative designs of new products. Communication skills, fundamental concepts and analytical skills are equally important for employability. The Government of India is now planning to close down Colleges and Universities that are not functioning effectively. The MHRD plans to divide them into 3 categories, as per their merit. The top category will get more autonomy and funding; the second category will be counselled to improve; the third category will be counselled and given a deadline to improve; if not, they will be closed down.

It is hoped such steps would be implemented without fear or favour, soon. The Indian youth are having a very high IQ and great potential for growth. They should be honed dexterously and empowered by a proper system of education and training for the prosperity of the country.

British Airways starts scanning faces for faster boarding: British Airways has started rolling out a facial recognition technology at its London Heathrow Airport to allow passengers to go through boarding gates faster. The biometric devices at the airport's main security screening area capture a traveller's features and boarding pass, after which a facial scan at the gate allows them to board the plane without showing documents.

Build India Campaign
The Digital Future, Innovation & Societal Transformations through Information, Communication & Entertainment (ICE) Technologies

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The developments in Computing and Cyber Technologies are breaking the barriers (time, language, distance) and the global trends to make the whole world a connected village. The economic, social, political, technological drivers show a stronger relationship between Information and Economy. There is going to be a sea change in the workplace, workforce and the future enterprises have to devise a new generation HR policies to retain and sustain global Knowledge workforce. The green computing and the environmental protection and sustainable development assumes a greater significance and trends in the Internet of Things (IOT/IOE) or Cyber of Everything (COE) drives and demands a collaborative, cooperative and coexisting workforce for sustainable development of the nation and world growth.

Creativity, Innovation, and Productivity are the three major factors to be nurtured and practiced by the People, Enterprises and the Nation for sustainable growth. A new era of cognitive systems where machines will learn, reason and engage with us in a more natural and personalized way. These innovations are beginning to emerge enabled by cloud computing, big data analytics and learning technologies all coming together, with the appropriate privacy and security considerations, for consumers, citizens, students and organizations for a better living in this Planet.

In the next five years, the following Societal Transformations are Predicted and Possible through Emerging ICT (source IBM COG Lab)

Smart Health Care coupled with Genomics and Analytics, Digital Guardian for online protection, promotion of Buying Local with Watson line application development platforms, Future Learning classrooms with new learning paradigms, Smart cities with dynamically adjustable to the citizens' needs will be facilitating and supporting the Societal Transformations.

To build a strong, vibrant and developed India, we have to start build India campaign and would like to describe the desirable attributes and characteristics of Good Ideal Professional Engineer/Graduate, and the respective role models to follow.

Innovation in Data Science/Engineering and Big data is fueling the growth economy of this emerging nation. In order to fully understand this growth, big data has to be viewed as more of an enabler than just a technical paradigm. Data volumes are growing and the pace of that growth is accelerating. Sensor data, log files, social media and other sources have emerged, bringing a volume, velocity, and variety of data that far outstrips traditional data warehousing approaches. Forward-looking organizations are harnessing these new sources in creative ways to achieve unprecedented value and competitive advantage. The large enterprises comprising a smaller fraction of the landscape are the most aggressive in their big data roll out strategies. These enterprises are looking to understand their customer segment better to increase sales. From analyzing customer influences on preferred telecommunications carriers to personalized customer offers, big data analytics is increasingly playing a vital role. Micro market segmentation and analysis is also playing a key role given the diversity and vastness of the local market. The public sector not only consumes but also generates a lot of data. Government sectors like security and finance are already relying on big data across most of the functional operations. Healthcare and industry policy reforms will be the next to embrace the wave. Increased data adoption in government will also considerably ease cross-functioning of the sectors and lead to better citizen services. Additionally, big data is helping the domestic industry to move more towards compliance and analytics is helping

ensure that we meet regulations per the local and international standards. This is helping local industries adapt to government policies and reduce compliance costs. The emerging trend is to move more and driving better business performance.

Fraud and Compliance: If you are responsible for security, fraud prevention, or compliance, then data is your best friend – if you can use it to identify and address issues before they become problems. The fact is, security landscapes and compliance requirements are constantly evolving, as are the methods that the bad guys are using to defraud your business and customers. In fact, these are applicable to all nations.

The Obama Administration's Big Data Working Group Entitled Big Data: A Report on Algorithmic Systems, Opportunity, and Civil Rights -2016, outlines the four significant areas of growth.

- Big Data and Access to Credit
- Big Data and Employment
- Big Data and Higher Education
- Big Data and Criminal Justice

The outcomes listed above are adaptable to all nations for faster growth and sustainable development. Shifting machine and operational data to the cloud, results in cheaper processing and enormous operational ROI. It is also forecasted that the small and medium industry will be a strong player given the limited resources to funds and the need to realize the potential of their data.

The Indian industry is on a major path of business transformation towards being customer centric that is only leapfrogged by big data analytics. While the momentum is picking up for big data, expect an equal thrust for borderless, global collaboration. Big data analytics is the key to unlocking the insights from all your data types, as it enables you to analyze all of your structured, semi-structured and unstructured customer data together. Operational Analytics Understanding Machines, Devices and Human Interactions Manufacturing, operations, service or product executives know all too well the intense pressure to optimize asset utilization, budgets, performance and service quality. It's essential to gaining a competitive edge

Acknowledgement:Big Data, Big Data examples in India, Big Data use cases, Big Data use cases in India, DLF, Flipkart, IBM, Jana Lakshmi Financial Services, Kerala Water Authority, Matrimony.com, Reliance Games
Source Dataquest 2015

New Rules for the New Economy

1. Embrace the Swarm. As power flows away from the center, the competitive advantage belongs to those who learn how to embrace decentralized points of control.
2. Increasing Returns. As the number of connections between people and things add up, the consequences of those connections multiply out even faster, so that initial successes aren't self-limiting, but self-feeding.
3. Plentitude, Not Scarcity. As manufacturing techniques perfect the art of making copies plentiful, value is carried by abundance, rather than scarcity, inverting traditional business propositions.
4. Follow the Free. As resource scarcity gives way to abundance, generosity begets wealth. Following the free rehearses the inevitable fall of prices, and takes advantage of the only true scarcity: human attention.
5. Feed the Web First. As networks entangle all commerce, a firm's primary focus shifts from maximizing the firm's value to maximizing the network's value. Unless the net survives, the firm perishes.
6. Let Go at the Top. As innovation accelerates, abandoning the highly successful in order to escape from its eventual obsolescence becomes the most difficult and yet most essential task.
7. From Places to Spaces. As physical proximity (place) is replaced by multiple interactions with anything, anytime, anywhere (space), the opportunities for intermediaries, middlemen, and mid-size niches expand greatly.
8. No Harmony, All Flux. As turbulence and instability become the norm in business, the most effective survival stance is a constant but highly selective disruption that we call innovation.
9. Relationship Tech. As the soft trumps the hard, the most powerful technologies are those that enhance, amplify, extend, augment, distill, recall, expand, and develop soft relationships of all types.
10. Opportunities Before Efficiencies. As fortunes are made by training machines to be ever more efficient, there is yet far greater wealth to be had by unleashing the inefficient discovery and creation of new opportunities.

Source and more details at: http://kk.org/newrules/

Digitalisation trends in Enterprises

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Macro-economic and Business Drivers:

At Macroeconomic level the economic, demographic and lifecycle & social trends are challenges in sustaining the overall global GDP growth. The economic trends are increased disposable incomes in emerging economies through globalisation initiative. This also results in increasing mobility specifically in urban sector contributing to 64% of travel kilometres. Growing scarcity of rare minerals and depleting fossil fuels is pushing the energy companies to find out alternatives technologies in energy sector. From the demographic standpoint, rapid urbanisation led to world population increasing in city from 51% to reach 61% by 2020, this results in challenges in creating the urban infrastructure like water, electricity, transportation, healthcare, security at the government level, that is one of the reason for various countries planning for smart cities and India also has plan to have 100 smart cities. Cities contribute to more than 60% of countries GDP. The urban population has a significant behavioural shift in Lifestyle and social trends, through adoption of social media network in a connected world, with affordable mobile communication, cheaper network bandwidth and cloud computing. The consumer expectation in terms of needs and behavioural patterns is changing fast. Environmental awareness has increased to have more green products and living, major contribution is from cities of approx. 80% Greenhouse gas (GHG) emission.

Business Drivers for the companies.

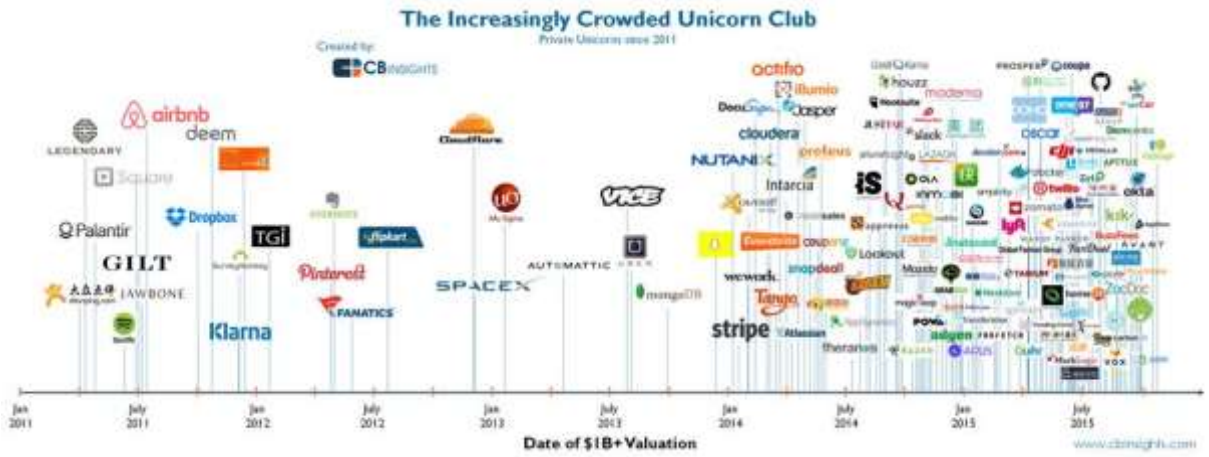
The business impact for the companies after globalisation is multifold. The below picture depicts the various contributing factors. 1) The product cost is coming down through stiff competition, innovation, and advanced manufacturing technology for a sustainable green products, which can be realised through low development cost, BOM cost, manufacturing and supply chain cost. 2) Talent shortage and availability on demand is acute globally. 3) R&D budget for new product development and sustenance project is shrinking. Companies are leveraging external eco system R&D capability in addition to in-house capacity through innovation in maximising the return on R&D spend. Top innovators have more market cap valuation and revenue growth and margin compared to Top R&D spenders.

Business Drivers for sustainability and growth

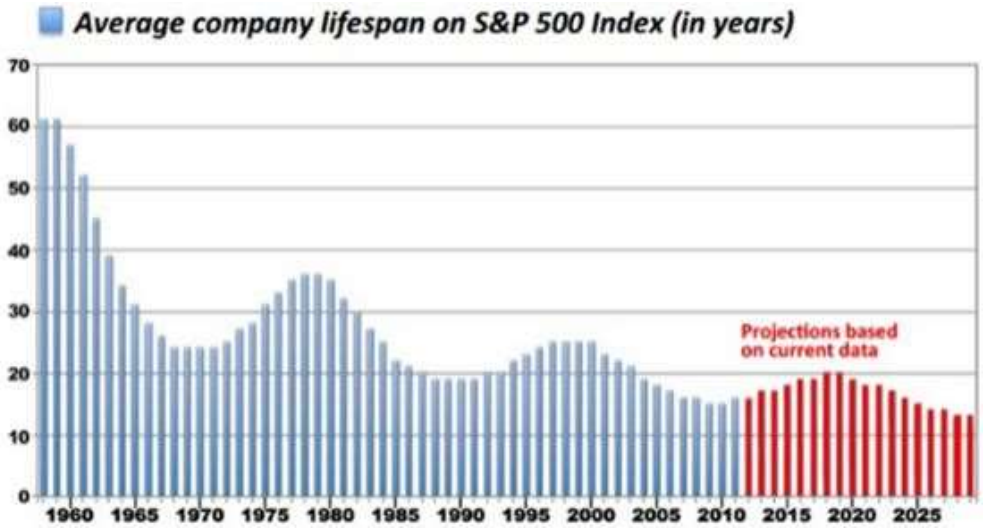
4) Product development time is also decreasing, with new development methodology and tools and virtual product development tools and software becoming available virtual product development is done before prototype is being built and tested for launch. 5) Stringent emission norms as result of global warming challenges put enormous amount of compliance in terms of complete business to be eco-friendly, right from product development, materials being used,

recyclability and manufacturing process and retiring of the product for recovering of the precious minerals and recycling of materials for reuse. 6) With SMAC everything is now connected in the sense from customer to manufacturer to supply and marketing leverage the social media, IoT, Cloud computing etc. The whole eco system has to be smarter in a connected world. 7) With the cost of electronics going down in the last two decades, more and more software is embedded in products and making the product smarter and programmable, configurable, diagnosis and maintenance can be done through a remote interface. 8) Until the end of the last century, companies were focussing on mass production and thereby reducing the production using automation of the shop floor etc., with new generation population always connected to internet and in social networking, the customer demand, behaviour and style has changed that customisation is the expectation, resulting in now Manufacturers have to focus on mass customisation. 9) With all the above disruptions and innovation happening across industry segments, companies have to be agile, and respond with speed, and understand and listen to customers. One of the impact of the digital revolution is the plummeting cost of technologies where cheaper and better ICT technology like social, mobile internet, analytical and cloud computing with internet of things is creating a more connected world. There are 8 billion devices connected to the internet as on today and growing exponentially.

To survive this disruptive innovation and be competitively thrive in the digital era, companies in all verticals or industry segments need to embrace digital technology and rethink, re-architect every element of their business function both vertically and horizontally with customer centricity. The Lowering cost of technology and its access and increased access to funds combined with rising entrepreneurial culture led to hundreds of start-ups targeting the traditional markets. To name a few - Uber, Twitch, Tesla, Hired, Beyond Verbal, WhatsApp, Airbnb and it is increasing.



1Bn + valuation



Average Company lifespan on S&P Index

If we look at S&P500 report on market cap of top valued companies, they are innovating in all business functions. If the companies do not change to dynamism in the market and continuously watch out for technology disruptor will become

extinct, if we look at the average life span of the companies it is decreasing and has come down from 60 years to 10 years.

Technology trends and its impact on the enterprises:

There lot technology development happening in all almost all sectors, some of them are disruptive in nature and called disruptive technologies which has potential disruptive impact on the nature of business and also the market changes due to those technology advancements. The market condition and the way business is conducted also will be changing continuously. Below are some of the technology trends which are top trends which affects all the industry segment in terms of product performance, way it is manufactured and distributed and marketed etc., customer relationship being influenced by SMACS (social media, analytics, cloud and security) undergoing major transformation. Key technology areas are the automation of knowledge work starting from robotic process automation(RPA) in technical support, design and development methodology done in cloud environment leveraging the crowd sourced ideas, design etc., if we categorise work into below types like a) managing others, b) applying expertise c) stakeholder interaction d) dynamic physical activities e) data processing f) predictable physical activities , then e,f, can be approximately 50% can be automated easily and c, d around 25% can be automated with little effort and finally a, b, which is approximately around 25% will need some more maturity of the technology to be automated. The percentage of work mentioned are indicative and varies for different industry. Automation need is basically a key factor for cost optimisation and reduction. This is similar to industry 3.0 when factory shop floor manufacturing was automated using robotics and control automation. Another area of focus for cost optimisation is on advanced materials development in metal, polymer, ceramic, composites, and nano technology due to demand in high performance materials, which requires advanced manufacturing technology. Additive printing which is evolving and maturing to be medium volume manufacturing technology eliminates costly dies and moulds etc., and complex design shapes and customised styles can be realised.

Top Technology Trends (Mckinsey & Co)

With so much happening business process and model has to change and adapt to the digital reality which will evolve and mature in 3-4 years.

Digitalisation domain

Companies seeking to embrace digital technology for process efficiency gain should have digital strategy and implementation roadmap aligned to the business strategy and business model innovation that is being targeted. CEO of the company should be driving supported by digital experts and council which will continuously get insight on the socio economic and technology trends. There should be a digitalisation roadmap with a step by step implementation plan. Major impact in digitalisation of the company will be the business models that will fundamentally change the way business is conducted for the existing and as well as for venturing into new business segments/ markets.

- Business model innovation can be put into below 10 types which are predominantly being adopted and shown in the table below.

Subscription	Customer must pay for the subscription price to access to the product/services	NETFLIX
Freemium	Basic services are free to access but additional features and services are chargeable.	Linkedin
Free	End users are not charged (directly). Revenue realised from the data and the behaviour of the users.	Google
Marketplace	Facilitate through a platform where parties commercial transaction is done with each other.	ebay
Access over ownership	Customers uses the product without buying it. "Everything as a service."	Zipcar
Hyper market	Digital stores, offering enormous amounts of products and/or services.	Zalanda
Experience model	Provides the customers with an unseen (user) experience	Tesla
Pyramid	Companies let the revenue stream upwards with less effort with terms for affiliates & resellers.	Amazon
On Demand	Generates revenue addressing the need of people right away with speed and convenience.	UBER
Eco System	Build an entire universe of products and services with a eco system for the customers	Apple/Google

Business model innovation

- One of the potential change is digitalisation of products and services. Products and services which can be smart and provide intelligent insight on its performance, remaining life prediction, any failure and safety features and finally consumer behaviour during its term of usage. Alert the service provider for any deficiency or fault for prompt preventive action to be taken up reducing the downtime which may minimise or eliminate costly recall etc.

- Top most priority for CEO is relook and revamp the existing operating models and bring lean approach to core business and the support functions for better operational efficiency and help the right stake holders in decision making at the right time with speed. Business process analytical tools are to be deployed to analyse and provide the correct insight on the business process status, increased engagement, loyalty, advocacy and personalised experience for the consumers. This transformation has profound impact on the leadership skill requirement to lead an organisation. Below summarizes the key skill needs:

    - Lead interdisciplinary skilled people in the digital domain
    - Innovative business / operating models
    - Create a vision and drive change for business performance
    - Influence stakeholders for change management for cultural mind-set change.

- The operating business model and associated complexity needs different set of digital talents and skill, investment has to be made to attract, retain and develop the right talent. Embrace the cultural transformation first in terms of mind-set change and encourage millennials to be part of the collaborative global work force, virtual team and second integrating robots with human workers in the work place.

- Digital metrics and dashboard in tracking the overall performance of the business in monitoring and reacting in real-time has to be identified and right type of KPI indicators to be available for all the stake holders at the real time for decision makers to act with agility and velocity. Real time data for any fraud, data security compromise, data theft detection and subsequent business risk foreseen to be alerted.

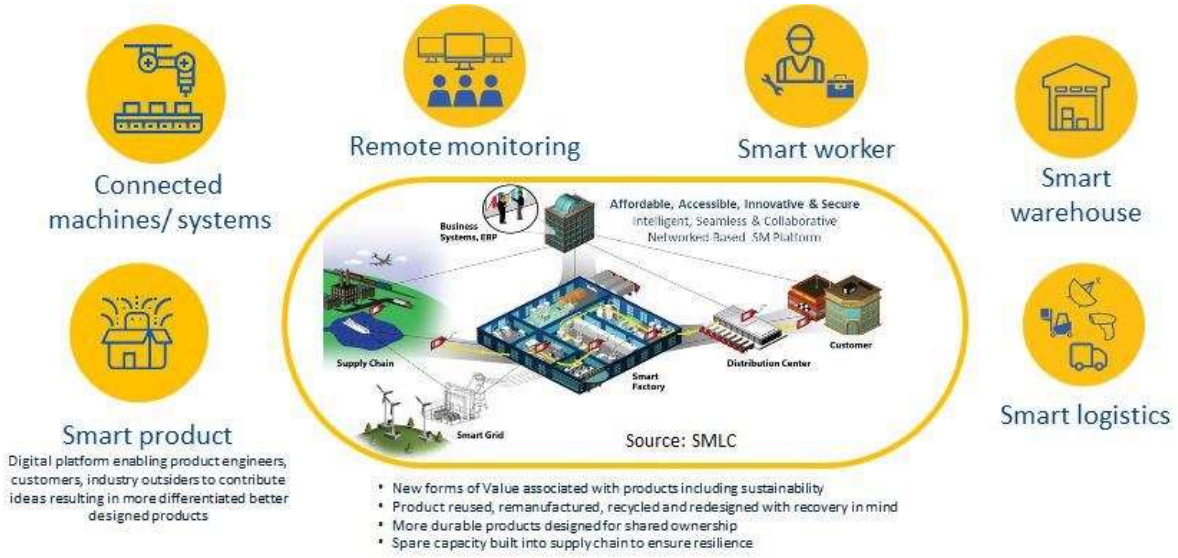
- Customer are telling us what they need implicitly through behaviour (social media data) and explicitly through direct communication and has a direct influence on the marketing, selling of product, so listening to customer

expectation, needs, and services is a must through various social media. No of customers having smart phones has increased. 6.8 Billion Mobile subscription equal world population. Globally 2.7 Billion people are online. More than 1 Billion people use social networks, data is doubling evert 18 months, unless you listen to what they say and understand their behaviour it will be challenging to fulfil the consumer demands. Demand assessment should be in real time, competition details, helping in forecasting for effective and efficient supply chain and inventory management. Mobile broadband subscription has jumped to 2.1 billion, what content, usage and sharing of information is happening in real-time has to be understood. All the above has influence on product needs and requirements and design, product lifecycle becoming shorter, frequent requirement change, preference and usage pattern are more important for product launch.

Digitalisation of Manufacturing Industry:

With the rapid advancement in SMACS and data cost going down, realisation of digitalised enterprises is becoming a reality and necessity in this new networked world.

From manufacturing in early 80s which was predominantly through mass production and automation manufacturing shop floor, in the 21st century we are moving towards the mass customisation. In smart manufacturing the whole eco system from customer product needs to conceptualisation and manufacturing until distribution has to be smart. In the shop floor basically machines are interconnected and intelligent and can collaborate with other machines and /or with humans. The production line should be flexible and should be responsive to product line, variants and volume and accordingly responsive in the scheduling and balancing the line. Energy saving and optimisation during idle time etc. The primary objective is to reduce the CAPEX and OPEX cost.



Digitalised Industry

Machines will be remotely monitored using IoT sensors inbuilt to give overall real time status of the machines usage, condition, and scheduled maintenance, preventive maintenance reducing the downtime etc., Workers in shop floor has to be working along with robots in the production line. Smart warehouse no more a storage center but with IoT and smart wearables for workers, integrated with autonomous robots(AGV- Automated guided vehicle) and pallets, with RFID tag on the stock which can be raw material input and finished goods storage, ware house efficiency will improve when warehouse management and control is also integrated with building management system. With application of artificial intelligence and optimization methods warehouse through put will improve a lot. Smart logistics for tracking of the components /parts, integrated quality assessment, inventory tracking and optimisation. This should be synchronised to the shop floor, warehouse and end consumer demand and needs and delivery model for on time delivery. Ultimate smart logistics goal is JIT with the integration of manufacturing operations and processes into a single unit that removes the need for a handling and storage processes and equipment between them.

Challenge in adoption of Digitalisation:

The key challenge for analogue companies to adopt digitalisation is visualisation of what and how digital adoption can be done, how to assess and value the ROI, and build a business case. Next level of hurdle is getting senior leadership buy in and influence all the relevant stake holders' mind-set change and commitment to the digital journey. What skill

set is required and how to acquire the skillset, and also attract millennials, manage and retain the talent. The Millennials have the innovation mind-set they are key in workforce composition. The right process change alignment, adoption and the necessary technology required to implement partially or fully or in staged manner. The implementation of the Digital drive needs to be supported by the eco system partners and their readiness to embrace digitalisation. Once this planning is done, bringing the change management and also to take a make or buy decision with limited digitalisation knowledge.

Digital Talented workforce:

Skill set which are important to be focussed upon for workforce to be ready for a digital enterprise categorised into 10 areas in the table below. Digitalisation requires new roles and skills as well as placing increased importance on some existing roles. In addition to having to master emerging technologies, adopt new ways of working, new methodologies, and ensure a shift in emphasis from building solutions to acquiring and integrating them. Many of the skills required, like User eXperience design, Social media, Mobile, Analytics, Cloud Computing and Security (SMACS), are in very short supply, specifically for some of the new roles, such as solutions architect, product / service and customer support manager.

Sl.No	Skill set	Description
1	Multi-discipline	Literacy and ability to understand concepts across multi discipline
2	Design Thinking	Ability to represent and develop work process for desired outcomes
3	Sense making	Ability to determine the deeper meaning or significance of what is expressed
4	Virtual collaboration	Ability to work effectively , drive as member of virtual team
5	Social Intelligence	Ability to connect to others to sense and simulate reaction and interaction
6	Cognitive load Management	Ability to filter information, to maximise cognitive functioning using a variety of tools
7	Cross cultural Competency	Ability to operate in different cultural environment
8	New media literacy	Ability to critically assess and develop content using new media forms
9	Adaptive thinking	Proficiency in thinking and coming with solution and responses beyond that is rule based
10	Computational thinking	Ability to translate vast data into abstract concepts, data based reasoning

Select skill set needs for digital enterprises.

The Inevitable: Understanding the 12 Technological Forces That Will Shape Our Future

Much of what will happen in the next thirty years is inevitable, driven by technological trends that are already in motion. In this fascinating, provocative new book, Kevin Kelly provides an optimistic road map for the future, showing how the coming changes in our lives from virtual reality in the home to an on-demand economy to artificial intelligence embedded in everything we manufacture can be understood as the result of a few long-term, accelerating forces. Kelly both describes these deep trends flowing, screening, accessing, sharing, filtering, remixing, tracking and questioning and demonstrates how they overlap and are codependent on one another. These larger forces will completely revolutionize the way we buy, work, learn and communicate with each other. By understanding and embracing them, says Kelly, it will be easier for us to remain on top of the coming wave of changes and to arrange our day-to-day relationships with technology in ways that bring forth maximum benefits. Kelly's bright, hopeful book will be indispensable to anyone who seeks guidance on where their business, industry or life is heading what to invent, where to work, in what to invest, how to better reach customers and what to begin to put into place as this new world emerges. The book outlines twelve trends that will forever change the ways in which we work, learn and communicate.

1. Becoming: Moving from fixed products to always upgrading services and subscriptions
2. Cognifying: Making everything much smarter using cheap powerful AI that we get from the cloud
3. Flowing: Depending on unstoppable streams in real-time for everything
4. Screening: Turning all surfaces into screens
5. Accessing: Shifting society from one where we own assets, to one where instead we will have access to services at all times.
6. Sharing: Collaboration at mass-scale. Kelly writes, “On my imaginary Sharing Meter Index we are still at 2 out of 10.”
7. Filtering: Harnessing intense personalization in order to anticipate our desires
8. Remixing: Unbundling existing products into their most primitive parts and then recombine in all possible ways
9. Interacting: Immersing ourselves inside our computers to maximize their engagement
10. Tracking: Employing total surveillance for the benefit of citizens and consumers
11. Questioning: Promoting good questions are far more valuable than good answers
12. Beginning: Constructing a planetary system connecting all humans and machines into a global matrix

Courtesy & Source: https://goo.gl/bu4tbu

Sustainable Building Management System

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Sustainable Building Management Systems have made tremendous strides in recent years toward embracing connectivity and interoperability standards. These efforts have given building owners more freedom to choose among manufacturers for both products and service support. Even greater benefits await an organization whose BMS is seamlessly merged with its information technology architecture. The synergy created by sharing infrastructure and data reduces operating costs and creates new service opportunities. Sustainable Building Management consists of

- ***Energy:*** reduce building energy consumption by promoting the use of renewable energy sources.
- ***Estimated annual usage:*** reduce demand for drinking water, generation of wastewater and impact on water resources.
- ***Air:*** improve indoor air quality and reduce the impact of emissions into the atmosphere.
- ***Materials:*** reduce the environmental impact of product life cycles and improve air quality.
- ***Waste management:*** improve indoor air quality and reduce the environmental impact of product life cycles.
- ***Economic efficiency:*** ensure economic property that support social development & that minimizes environmental impact.
- ***Architectural heritage:*** preserve the architectural heritage of construction sites.
- ***Health and life quality:*** improve the health and life quality of tenants and the neighboring community.
- ***Equity and civic spirit***: promote equity and civic spirit with respect to apartment facilities & renovation work.
- ***Information and participation:*** share a vision of projects based on user participation and information.

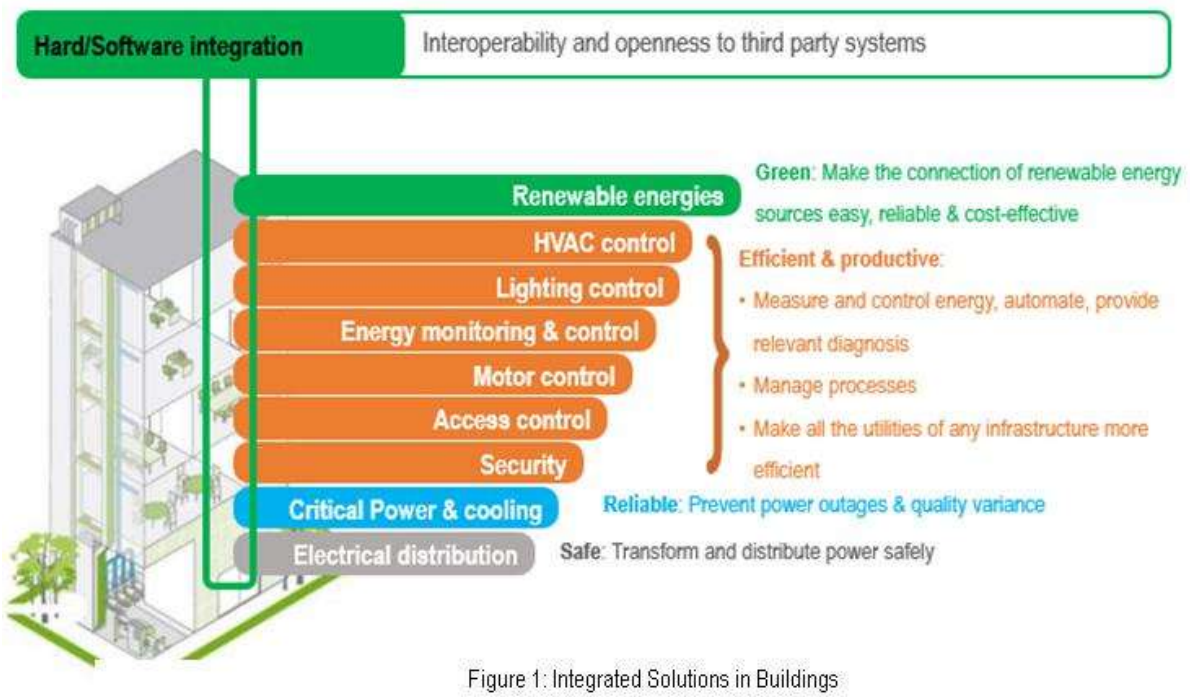


Figure 1: Integrated Solutions in Buildings

Functions:

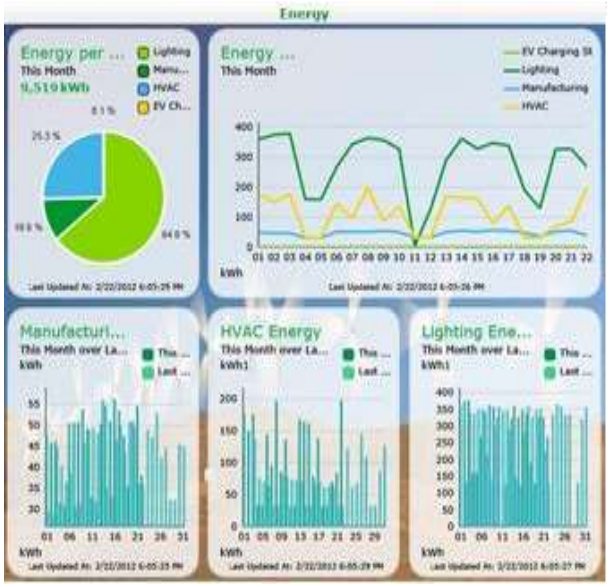
- Remote/Central control facility
- Automate and take control of various operation
- Manage all the systems
- Coordinate the various systems
- Provide a comfortable working environment in an efficient way
- To control, monitor and optimize building services (e.g., lighting; heating & cooling; security; audio-visual and entertainment systems; ventilation and climate control; time & attendance control and reporting)
- Facility Management and Preventive Maintenance

Benefits:

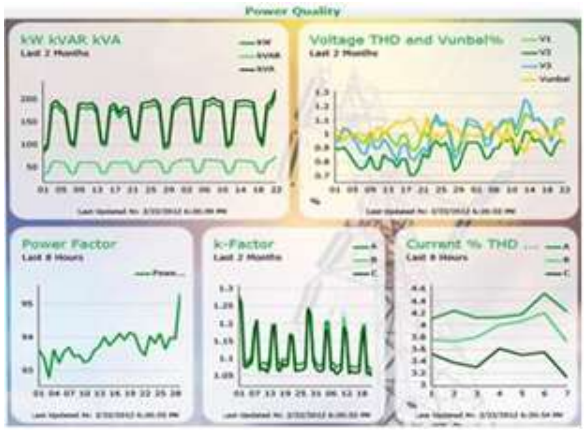
Building management will benefit in four important benefit categories:

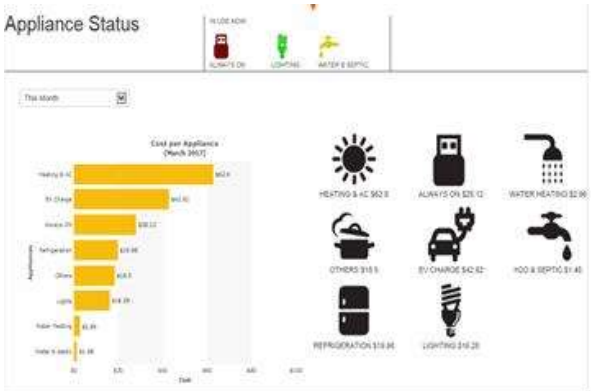
Higher Energy Efficiency

- Occupancy based control through Occupancy Sensor for meeting & Conference rooms, which resulted in 10-30% energy savings.



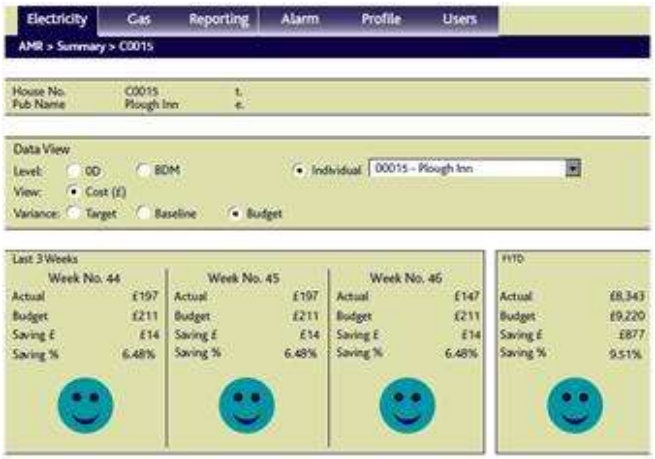
- Occupancy based control through Occupancy Sensor for meeting & Conference rooms, which resulted in 10-30% energy savings.
- Another control practice with direct ties to energy efficiency is what has become known as demand control ventilation. Here, only the proper amount of outside air is introduced into the space by monitoring return or space CO2 levels and controlling fresh air dampers which resulted in 15-20% energy savings
- Proper implementation of advanced, demand-based zoning systems such VAV and chilled beam had created good deal of energy savings.
- Coupling these strategies with proper static pressure control of the supply air (such as with VFD's on the fans) results in 20-40% energy savings





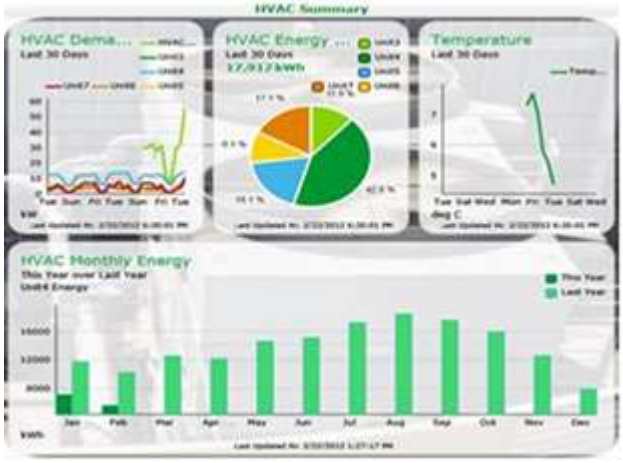
- Scheduled based operation of AHU's & Chiller's results in 10-15% energy savings
- Level based control through level transmitter/switch for PHE pumps for filling water in the tanks/sumps, which resulted in 25-35% saving in energy as well as water consumption

Lower Operating and Maintenance Costs



- Control from Centralized Command Center of entire campus
- Trends and logs provide information for further optimization of the system as well as for documentation requirements for building certification.
- Software alarms and notifications alert service personnel based on sensor data to issues before they cause discomfort to building occupants and escalate into bigger, more costly problems

Better Indoor Air Quality



- Temperature and humidity sensors monitor thermal comfort.
- Carbon dioxide (CO2) & carbon monoxide (CO) sensors monitor pollutants, ensuring the required minimum fresh air ventilation.
- Control systems provide smoke control during a fire, maintaining breathable air zones for evacuation.
- The control system monitors and controls natural ventilation dampers

Greater Occupant Comfort and Productivity

- Controllers, based on sensor input, provide optimal zone ventilating, heating, and air conditioning
- Sensors in each room sense temperature and allow occupant-controlled set points and overrides.
- Humidity sensors are used to control summer dehumidification and winter humidification of air.

Future trends:

Wireless Communications

A common feature of today's IT infrastructure is the in-building wireless distributed antenna system. The basic infrastructure is a system of cables, antennas and other components engineered to capture and convey signals throughout the building, and confine them to the interior. When added to the wired infrastructure, they can help building occupants tap the full power of todays and tomorrow's wireless services and applications.

The goal is to employ an in-building wireless distribution system that provides complete wireless coverage for a full range of voice and data services. Once a wireless distributed antenna system is installed, it can be modified and expanded without intrusive, costly infrastructure changes. A well-engineered system helps eliminate dead signal spots and facilitates the expanding number of wireless applications and devices. These include wireless LANs, personal communications services (PCS), cell phones, PDAs, pagers and two-way radios for maintenance and security.

Such a system also enables wireless building automation in conjunction with a state of the art building automation system. The wireless infrastructure will help the BAS access data from multiple enterprise applications and assimilate the data into meaningful information that helps busy managers operate more efficiently.

This technology will help customers seamlessly and cost-effectively integrate fire and security systems and other building controls, whether they are in one building or spread across a corporate campus. As momentum builds, wireless distribution technology will become an integral part of a facility's infrastructure, providing building owners with solutions that simplify operations, reduce costs and improve efficiencies

Internet of Things (IoT)

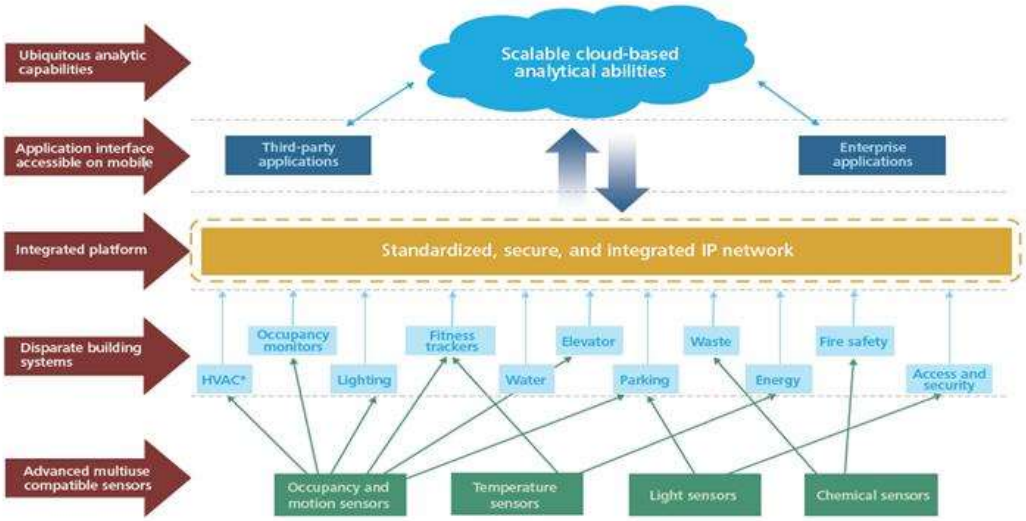


Figure 2: IoT information value stack for buildings

Internet of Things (IoT) applications aim to grow margins and enable features such as dramatically more efficient building operations, enhanced tenant relationships, and new revenue generation opportunities. Consider the increasingly popular smart thermostats that intuitively adjust the temperature, humidity, and light based on residents' preferences and climatic conditions.

While consumer IoT devices have drawn most press attention, it is enterprise-level adoption of the technology that will likely have the bigger impact on industry. Using IoT-enabled building management systems (BMS) to make building performance more efficient and also use sensor-generated data to enhance building user experience.

Recent smart-city forecasts highlight the potential: "Smart commercial buildings will be the highest user of Internet of Things (IoT) until 2017, after which smart homes will take the lead with just over 1 billion connected things in 2018." For instance, sensors in shopping malls can help owners connect directly and offer services to end customers. This would lead to building relationships with customers as well as strengthening tenant engagement.

BIM & BAS

The integration of green design is another factor that can add value to traditional BIM. The global recognition of the need for greater efficiency and sustainability has led to a significant increase in green design and implementation of sustainable features. Employing BIM facilitates the adoption of a variety of sustainability efforts from the very beginning of the design phase efforts that otherwise may have gone unrecognized in this early phase. Everything from building orientation and choice of materials to energy consumption and temperature analysis can be incorporated as parameters to deliver the best integration of all elements and to produce the optimum sustainable design.

At its best, sustainability resides in the design phase of a building. Optimization of sustainability achieved during the building's design phase provides the greater potential for optimization throughout the building's lifecycle.

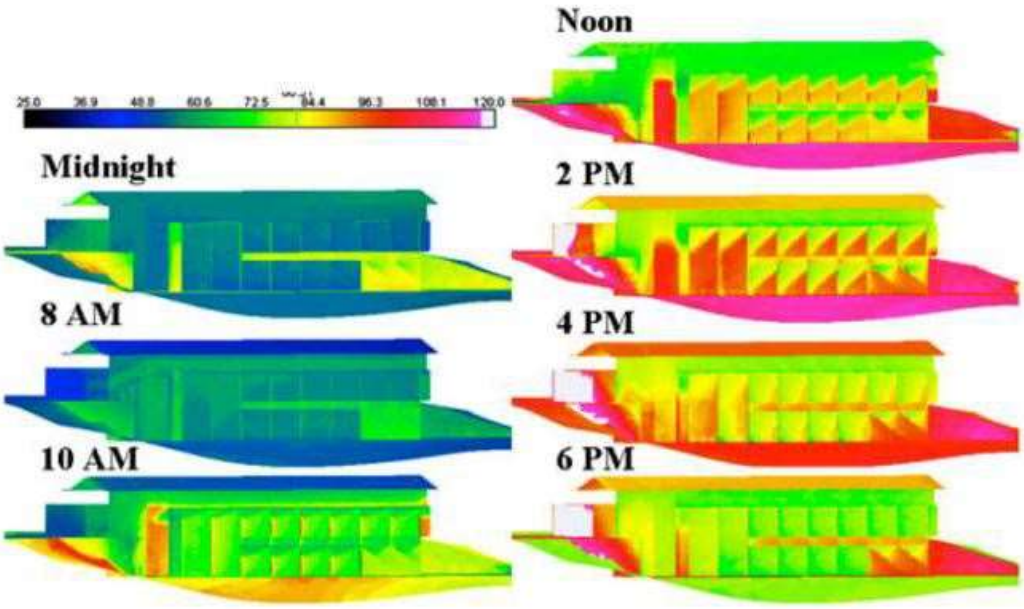


Figure 3: Energy analysis at different times during the course of a day

By utilizing BIM during the design process, an architect can compare differences in energy consumption between two design variations without having to use experimental data just the available environmental and case-specific data. Using BIM with specific variable parameters that are set according to project characteristics allows the designers to graphically portray differences in energy consumption between two unique designs or between two variations of the same design.

Examples of different project characteristics are:

- Geographic coordinates and location contain variables such as inherent average temperatures, climate conditions and wind.
- Building orientation with respect to the sun
- Maximum and minimum wind velocity
- Height
- Shading effect on temperature
- Materials (unique materials properties, thermal and cooling specifications and heat absorption)
- Size
- Building use
- Building envelope
- Owner specific variables

Conclusion:

Sustainable Building Management system, when embedded throughout an organization, its strategy and operations, can drive value across a number of dimensions, information technology architecture are a seamless entity. They work in concert because they share resources and adhere to the same set of standards. This ideal
scenario offers many benefits, including:

- Reduced management and infrastructure equipment costs.
- Critical building system information is readily available at all levels of the enterprise.
- Employees can access and act upon this information without the constraints of a dedicated workstation at a fixed location.
- New services are possible that save time and preserve resources.

When making an investment in BMS technology, an organization should look beyond today's configuration. Decision-makers need to cast a wider net and recognize the advantages of merging the building automation system into the IT infrastructure. Whatever technology platform is selected to harness energy and operational data, it must be fully compatible with the IT network that is already in place. Allow the BAS to rely on the IT network as the data highway for safe and reliable transportation of information. In return, the IT staff will provide critical services for planning and maintenance.

Reverse Supply Chain Management E-Waste Handling System Review

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Abstract:

As per the detailed study, from the last few years the Reverse Logistics is gaining an extremely high importance. Due to the demands for rising environmental awareness as well as economic pressures this type of Electronic Waste Handling system tends to be in ultimate requirement. As a matter of fact, it would be beneficial to the individual companies in terms of increasing the effectiveness and efficiency of their recycling process which creates the optimum supply chains. However, this recycling technique can be applied in various circumstances.

The primary strategies which can be used in such versatile situations are lean, and agile. Ultimately, every electronic industry implementing this recycling system must possess good commercial returns for all the maintenance and repair services they take up. By doing comparative analysis, we have tried to prove the practical importance of RSCM E-Waste Handling System.

Key Words: E-waste , Reverse Supply Chain Management of E-waste handling system

Introduction:

Figure 1: Products Flow in a general Reverse Logistics System

First of all, once the electronic products are delivered to the end customers, it is not the end of the electronic product life. They can be considered as the used products and taken back through the supply chain system. This certainly helps in reusing, recycling, remanufacturing, and repairing in the best possible manner.

However, integrating all these will give rise to the fundamental process of reverse logistics. Most evidently, this process of reverse supply chain Management is clearly depicted in the figure 1. This process is the integration of both service components and environmental components.

In addition, we have made the comparative analysis between forward and reverse logistics. The process of forecasting is difficult in case of reverse logistics. At the end, the quality of the product will not be uniform in reverse logistics. However, the pricing depends on various and tends to be inconsistent factors unlike forward logistics. In reverse logistics, the management of inventory and product life cycle is extremely complicated.

However, establishing such a system requires the huge amount of investment from the electronic industries point of view. On the positive side, it can bring an excellent profits, top-notch corporate image, and better customer satisfaction in order to maintain their long term relationship. In order to take part in solving the increasing environmental concerns, the electronic companies are posed to the responsibility of implementing reverse supply chain management systems.

However, the companies must be ready to face certain number of definite challenges after the installation of reverse logistics system. The conflict can arise between retailer and manufacturer because of the delayed time in returning the processed product returns. It becomes very important to maintain the clean working partnership which will result in mutual benefit.

The chief elements must be understood clearly before setting up the reverse logistics system. The firms must assure the negotiation of the returned product price. Most prominently, one should be well aware about how to financially manage the whole process. Another important fact is, it is not mandatory for the firm to keep all the processes in house. Outsourcing the functions of reverse logistics tends to be beneficiary.

The extended product responsibility abbreviated as EPR must be adapted by the electronic industries. It is helpful for finding new ways to prevent pollution along with the minimization of energy usage.

Consequently, the reverse flow process of the electronic good as shown in the figure 1 must be definitely a part of logistics planning. Altogether, it will make up the complete supply chain management of the organization. The adaptation to this new supply chain helps the companies to achieve reliable competitive advantages. Gradually, the trade-offs between the product quality and cost is brought forward along with the betterment in product price as well as customer service.

Literature Review:

Generally, the electronic goods possess shorter life cycle. As per the statistics, in the United States 325 million personal computers became outdated in the time period between 1985 and 2005. As a matter of fact, the toner cartridges are remanufactured with the help of 12,000 companies holding 42,000 workers and reaching $1 billion sales every year.

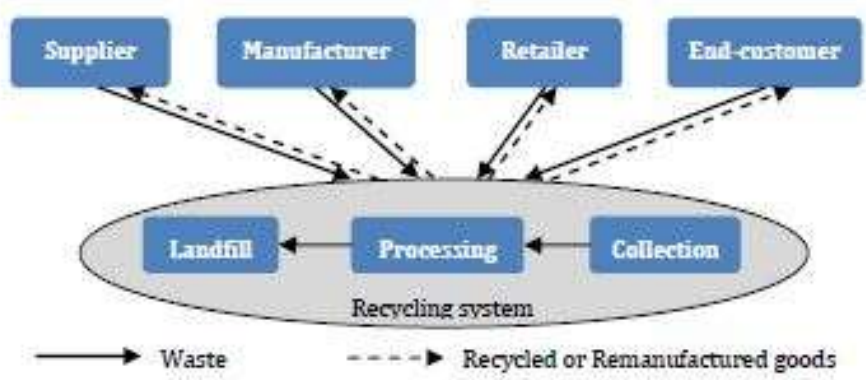

Figure 2: Flow of electronic goods in reverse supply chain logistics system

Since, the field of reverse supply chain management is new in the field of business logistics, the perfect analysis of the efficient implementation must be done in prior by all the electronic industries. As per the figure 2, it can be depicted that the hazardous as well as non hazardous electronic waste is collected from various sources such as main supplier, manufacturer, retailer, and end-customer. Later, these collected wastes are processed and made to undergo necessary treatment. Finally the recycled and reformed products are sent back to respective sources.

The term waste can include used products, obsolete products, excess inventory, production scrap, damaged products, seasonal inventory, packaging materials, and many other types of residues. As a matter of fact, the reverse logistics system connects the end-customers and suppliers through manufacturers and retailers. Moreover, this E-Waste handling system can distribute the products in the reverse direction, unsold goods is returned, returning damaged and wrongly delivered goods, recalling of products, and management of wastes. Most evidently, the process of how the waste goods are treated in the reverse logistics systems is represented in the standard hierarchy diagram as shown in the figure 3.

Figure 3: Hierarchy of the activities of Reverse Logistics system Treatment

As per the interpretation from the figure 3, the reuse is given the top priority in the reverse supply chain Management system. Consequently, down the hierarchy the process of remanufacturing as well as recycling is followed. Lastly, the wastes are either deposited in the landfills or energy recovery disposals. The hierarchy structure can also be inferred in terms of different characteristics.

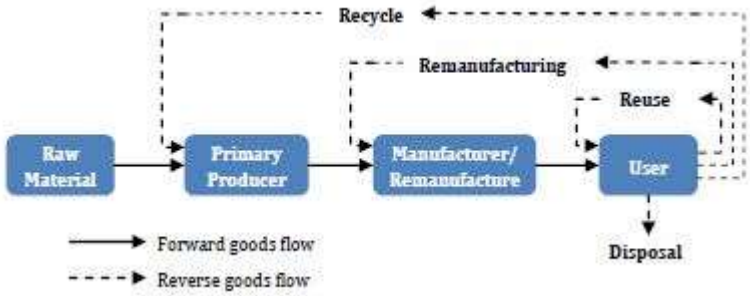

Figure 4: Various activities in the reverse supply chain system

In the first place, the electronic products will be reused by the end customers for exactly the same purpose will certainly improve the efficiency of the recycling system. In the next level, sometimes the products need to be recycled or remanufactured. However, this lowers the quality of the goods as compared to the new goods. Finally, the products can also be disintegrated into its components. After analyzing their working functionalities, the damaged parts are chosen to be safely disposed into the environment. As a result, the activities mentioned in the hierarchy can b interlinked based on the activities which are also represented in the figure 4.

Methodology:

Figure 5a: Reverse Logistics Supply System

As shown in the figure 5a, the customer can return the waste goods which mainly include unwanted wastes, defected pieces, products having warranty problems, recalls, along with the problem of miss-shipments. The most challenging fact while recycling the e-wastes is linked with the regulatory policies. Hence, the firm must focus in effective planning of reverse chain design. The firms must treat the reverse logistics as a value and brandenhancement stream instead of e-waste treatment stream.

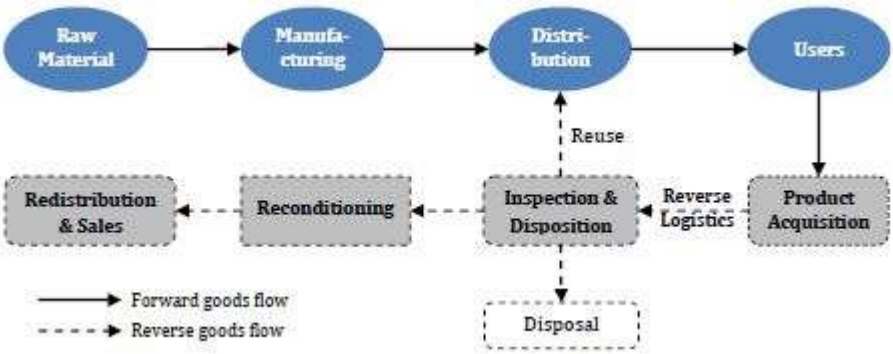

Figure 6b: General process of Reverse Supply Chain Management E-Waste System

Before the installation of this E-Waste handling system, the electronic industries must analyze the appropriate structure. The structure of the system they choose must be cost and value efficient in order to improve the effectiveness of the overall installed system. In order to do these, the companies must analyze their major activities which are of critical importance for the industry. Additionally, you can opt for outsourcing some of the activities so that the company's overall cost efficiency are maximized to the nest possible level. Apart from choosing the appropriate activities, the

companies must also learn about the primary components of the reverse supply chain management system. This will ensure to the better management and control of all the stages of waste handling process. However, on the general basis, there would be 5 distinctive processes in a reverse supply chain system. These processes are clearly mentioned in the figure 5. In order to enumerate them:

- Product Acquisition
- Reverse Logistics
- Inspection and Deposition
- Reconditioning
- Re-distribution and Sales

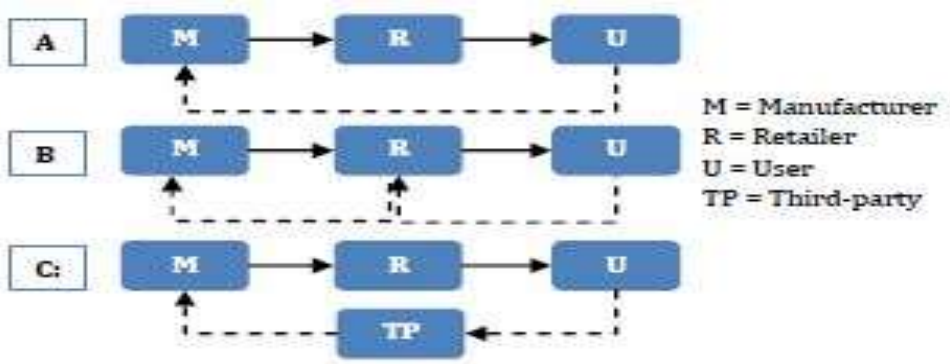

Figure 7: Types of collecting wastes

As a matter of fact, the fixing of reverse E-Waste handling system in the industry does recommend the high amount of investments. To be more precise, each step ranging from the acquisition of waste goods and waste deposition being involved in the reverse logistics system will pose a definite cost. So, the systems are designed in such a way as to minimize the economical requirements as well as increase in the commercial returns of all the goods selected for recycling. In order to achieve this, the process of acquiring the electronic wastes must be strategic and well planned one.

As depicted in the figure 6, there are typically three methods for collecting the electronic wastes. The first method named as A refers to the collection of wastes directly from the users itself. Secondly, the method named as B refers to the collection of wastes from the retailers, and finally the method named as C refers to the collection of wastes from the third party companies. As a concluding point, it would be better to choose the collection method C. This is because remanufacturing would prove beneficiary for the manufacturing companies. Additionally, the third party companies will be in contact with the manufacturers. Hence, the electronic manufacturing industries must strategically choose the E-Waste collection methods in order to improve their revenue generation.

However, the efficient use of inventories is highly recommended in order to make customers purchase more number of new goods. The clean channels and fresh inventories improve the profit margin. Additonally, choose the disposal techniques strategically. This is because the legal disposal issues seems to be highly complicated and it has become difficult to dispose non-salvageable materials.

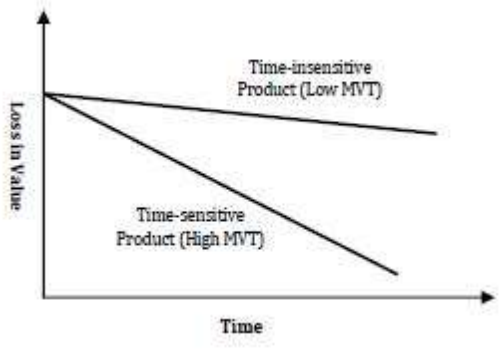

Figure 8: Loss in Value against Time Analysis

In the reverse supply chain E-Waste handling system, the time value handling plays an extremely important role. From the graph in the figure 7, it can be concluded that the cost efficiency is inversely proportional to the response time taken by the waste handling system. In other words, it can explained that the cost effective reverse supply chain system takes more time for process of handling e-waste. The collection of waste goods and re-distributing of the recycled products takes large amount of time in case of cost efficient systems. On the negative side, the delay in processing time will definitely reduce the quality of the goods. So, every time the product must be analyzed for its marginal value of time since it is the significant product configuration concerning the reverse supply chain system. Most evidently, the term marginal value of time can be explained as the loss of value for every unit time spent during the E-Waste handling in the reverse supply process system. Ultimately, it can be used to determine the costs of time delays. As a whole, the figure 7 depicts that the products from various industries and categories have different marginal value time.

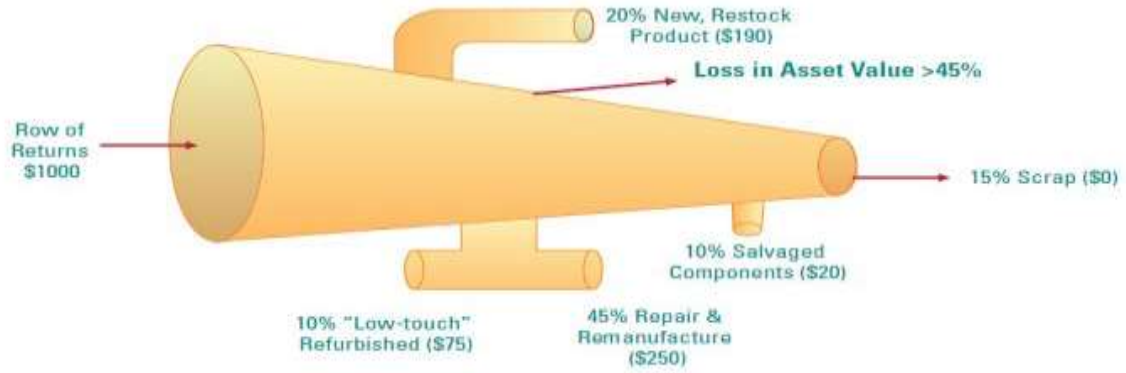

Figure 9: Diagrammatic Representation of Product Returns as Shrinking Pipeline

In the figure 8, depicts the way in which the products lose the time value in the reverse supply chain management system. On the other hand, this type of loss is dependable on the product category. For example, the products such as laptops and Personal Computers have greater time value depreciation when compared to the products such as machine tools.

Figure 10: Efficient Reverse Supply Chain Management System with the centralized theme

As a matter of fact, the reverse supply chain system can be regarded as efficient when it completely focuses on lower cost in the overall processing technology of the electronic product returns. In this type of design, the cost efficiency is maintained in the higher position where as the speed of the process has gone down. Hence, there is a trade-off exists between the speed and cost efficiency. Most prominently, this type of process treatment can be applied only for those products which has shorter value depreciation or time depreciation.

When the stages of testing and evaluation are centralized as depicted in the figure 9, the cost efficiency in the reverse supply chain system can be achieved. Ultimately, the product returns are tested and evaluated at the central facility being designed and then the credit is issued. However, the resellers or retailers do not take part in the activity of product evaluation at any cost. As a result, the shipping costs can also be reduced by shipping he processed products to the manufacturers in bulk. Once the product passes through the testing phase, it is strategically disposed in the relevant category such as scrapping, restocking, salvaging, or refurbishing. This centralized system certainly minimizes the processing costs to the great extent. On the negative side, the figure 9 proves that there is a considerable delay in differentiating the products since all the product returns are shipped to the center facility. Hence, this is referred to as the system design involving postponement strategy.

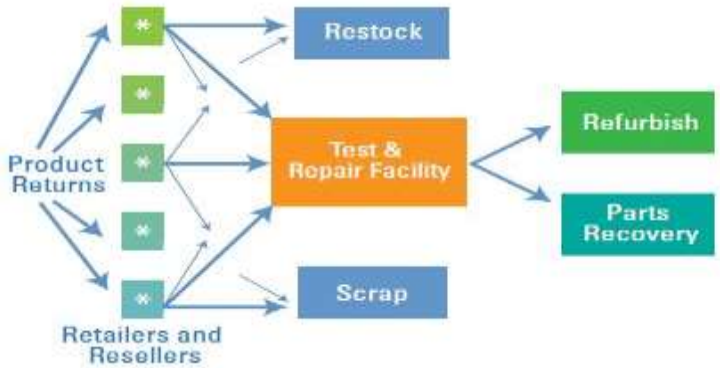

Figure 11: Decentralized based Reverse Supply Chain Management Process

In the previous figure, centralized system used the concept of postponement strategy. As depicted in the figure 10, the decentralized system makes use of preponement strategy. When personal computers are taken into consideration, they tend to have higher asset value over time. For such products, t better to prepone the testing phase and evaluation phase. Most importantly, this methodology ensures the unused product returns are immediately restocked which was not possible in the case of centralized system. The testing phase is actually conducted at the point of return by the retailers or resellers. As a whole, it must be technically feasible and might demand expertise development from among the retailers as well as resellers. It would become important to incentivize the resellers through the shared saving contracts with the manufacturers. Additionally, the establishment of inventory process managed by vendor is highly recommended in order to deal with large retailers. It would also be better if they maintain their own technicians for testing the product returns.

Conclusion:

After the detailed analysis of the reverse supply chain management Electronic Waste Handling System, it is understood that one must choose the proper strategies and the characteristics of the product returns since it plays a very important role in installation of relevant reverse logistics by the companies. The companies are recommended to predict the market demand, life cycle of the product, and lead time replenishment. The companies must handle the processing strategies in accordance with the circumstances such as predictable product demand, product demand is unpredictable and lead time is short, or when the lead time is long along with the unpredictable product demand. Ultimately, the implementation of RSCM is extremely important.

The concept of reverse logistics must be strategically used in order to meet the market's competition. From the last few years, the return policies are made liberal. However, there is also a misconception that buying back the used and unwanted products do not meet the needs which must be removed completely. Ultimately, the reverse logistics is recommended to be installed by the companies. This will ensure the product brand enhancement and also serves as the marketing incentive.

If the reverse supply logistics system is installed by the firms, the value of the products essentially increases and ensures the provision of quality products by satisfying the end-consumers. With such an environment friendly implementation, the landfills can also be reduced to the significant level. Additonally, the recycled materials can be circulated for the efficient resource usage which ultimately reduces the usage of raw materials. As a result, the environmental hazards can be controlled by converting the hazardous products into green product.

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Four jail inmates enter Limca Book of Records for making app: Four jail inmates of Haryana's Bhondsi Jail have entered the Limca Book of Records for making an app called 'Phoenix'. Installed at 11 Haryana prisons, the app helps in managing prison canteens and case history of prisoners. To make the app, prisoners were for the first time, sent to other jails within the state for "work purposes."

The Need for a New School of Thought Human Potential Development

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THE GLOBAL PROBLEM

Today's children can meet future challenges if their schooling and informal learning activities prepare them for adult roles as citizens, employees, managers, parents, volunteers, and entrepreneurs. To achieve their full potential as adults, young people need to develop a range of skills and knowledge that facilitate mastery and application of English, mathematics, and other school subjects. At the same time, business and political leaders are increasingly asking schools to develop skills such as problem solving, critical thinking, communication, collaboration, and self-management—often referred to as "21st century skills." Private foundations, policymakers, and education organizations use a variety of names for the lists of broad skills seen as valuable.

The reality of building capacity for the 21st century is that we do not know what the work of the future will be like or how technology will influence health and financial issues. The challenge is to prepare students to think critically, to engage in mental activity, or habits of mind, that "…use facts to plan, order, and work toward an end; seek meaning or explanations; are self-reflective; and use reason to question claims and make judgments…". It may be that our task is not only to prepare students to "fit into the future" but to shape it. "…If the complex questions of the future are to be determined… by human beings…making one choice rather than another, we should educate youths - all of them - to join in the conversation about those choices and to influence that future…".

One Oxford study found that 47 percent of U.S. jobs are at risk in the next 10 to 20 years. Fast Company highlighted the 10 most at-risk jobs in 2014, which include jobs like mail carriers and farming. Much of IT administration is expected to be automated. In fact, the cost and speed of automation continues to decrease and create a mash able world. With the speed of knowledge obsolescence, reinvention is becoming a major job skill.

- 1980-2010 global labour rose 1.2 billion to 2.9 billion – set to grow another 600 million to reach 3.5 billion by 2030.
- Globalisation and technological change – 1.1 billion non-farm jobs created in developing economies.
- Skills mismatch between labour supply and employer demand.
- There will be a global shortfall of 85 million high and medium-skilled workers by 2020.
- Three fundamentals for growth: potential identification + skills development + job creation.

THE CHANGING WORLD: THE NEW SCHOOL OF THOUGHT

a. NEW ECONOMIC AND SOCIETAL CHANGES

- China and India emerge as massive economies
- Knowledge superinfrastructure
- Digital Taylorism
- National innovation networks.
- Migration of Production to low cost countries
- Outsourcing of back office operations

b. FUNDAMENTAL CHANGES: BUSINESS DRIVERS WORK TRANSFORMED

- One-fifth of reported vacancies could not be filled due to a lack of applicants with the necessary fitment.
- High performance organisations not place an emphasis on developing the skills they need in-house due to mismatch in job and motivation skills.

- Job opportunities for unemployed and inactive employees are unlikely to improve due to access lower or less specifically skills on 20th century.
- The definition and understanding of the term skills can be complex with overlaps between skills, qualifications and characteristics.
- Overall, employers are less demanding of technical skills, considering them trainable, if candidates exhibit employability and positive attributes of 21st century skills.
- There is a greater emphasis on 21st century skills and global competence but assessing how these are measured precisely is problematic. Often measurement is based on perceptions of the interaction with candidates at interview not a systematic way.

c. TECHNOLOGY DRIVERS WORK TRANSFORMED

- Tremendous mental workload on information workers
- Improve performance to free cognitive bandwidth
- Our default state is mind wandering and hot let our subconscious mind work.
- Email has moved from being an excellent communication tool to being a source of job dissatisfaction.
- Reduce the number of unimportant decisions to enable better decision making.
- Fewer decisions and simplicity will drive systems that are more productive.
- Part of the quantified self will be getting just in time learning in the fastest most efficient way possible.

d. THE CHANGING MINDSET

- Companies confining recruitment of highly skilled workers to western 'magnet' economies.
- Companies becoming more dependent on the knowledge of employees and to what extent were they willing to pay a premium to high skilled workers?
- Globalisation of high skills and the creation of global skill webs.
- Creation of global skill webs and skill strategies
- Companies decide on where to locate new high tech investments?
- Sourcing medium and high skilled work in both high and low cost economies
- What are the implications of this for skills policy?
- What are the emerging strategic skills requirements?
- How can government stimulate greater co-investment with employers and individuals in higher level and strategic skills

THE INDIA PROBLEM

There is one sector in which the news gets consistently worse: India's education system. Over 290 million students attend educational institutions on a typical working day. Enrolment has increased tremendously in Schools, Technical and Professional Courses, Colleges, Distance Learning Centers and even in Coaching Centers. In 1951, 19 million were enrolled at elementary level (classes 1 to 8) and just 1.5 million from 9 to 12. Today, elementary sections have over 130 million enrolled and 37 million in higher classes. Higher education has seen a stunning 100-fold enrolment growth — from 1.7 lakh students in 1951 to over 12 million currently. What drives Indians is hope that educations will open doors to a better life.

India is one of the youngest nations in the world with more than 54% of the total population below 25 years of age. India's workforce is the second largest in the world after China's. While China's demographic dividend is expected to start tapering off by 2015, India will continue to enjoy it till 2040. However, India's formally skilled workforce is approximately 2% - which is dismally low compared to China (47%), Japan (80%) or South Korea (96%).To leverage our demographic dividend more substantially and meaningfully, the Government launched the "Skill India" campaign along with "Make in India".

a. ECONOMIC FORCES: DEMAND FOR COMPLEX SKILLS AND SHORT LEAD TIME TO BUILD SUSTAINABLE COMPETITIVE ADVANTAGE IN INDIA

Over the past 30 years advanced economies have become increasingly hungry for skills. New technologies have combined with intellectual and knowledge assets – the 'intangibles' of research, design, development, creativity, education, science, brand equity and human capital – to transform the economy. Across all sectors – manufacturing and services, high tech and low tech, domestic and internationally traded, public and private, large corporation and small enterprise – organisations have prospered by allowing highly skilled individuals the freedoms and flexibilities to deploy new technologies to rapidly create tailored products for increasingly sophisticated customers. The tripling of business investment in 'intangibles' such as human capital, research and development, software and design between 1990 and 2010.

Economy will be more and more based on knowledge and science in the future, human capital is essential not only for individual well-being and social inclusion but also for competitiveness and openness of the economy. The emergence of global skill webs reflect the salience of skill as a source of competitive advantage within multi- national companies, but they do not simply reflect the growing importance of knowledge and skills to product innovation (where the value of human capital is likely to remain at a premium), but due to the globalisation of high skills that has far reaching implications for the relationship between skills, jobs and rewards.

b. SOCIAL FORCES: EFFECTS OF GLOBALISATION ARE PROMINENT IN DRIVING THE SOCIAL CHANGES IN INDIA

Rapid, complex and pervasive changes are occurring that will continue to impact labor and talent— both in terms of quality and quantity. From unrelenting global demographic and economic forces to the increasing mobility of people and organizations, the business environment is more demanding and complex. There are knowledge-driven industry transformations as well as cultural changes — within businesses and in individuals' views on career life cycles. These require higher cognitive capabilities; extensive relationship management and leadership skills; and new human resource, development and career processes. There is a much wider diversity in culture, gender, working generations and modes of employment than ever before. These can be sources of advantage to be leveraged or conflict to be managed. Despite today's global financial circumstances, the capacity of organizations to attract, develop, motivate and retain talent will remain a critical strategic issue for the 21st century's knowledge economies. It will impact the ability of organizations to survive the crisis and ready them for eventual recovery.

c. POLITICAL FORCES: INDIA AT HER TURNING POINT

Meritocracy will gain importance and cultivated. People who succeed under the system, must feel the duty to contribute to the society. Continue to have a strong emphasis in work and rewarding individuals who work will be the most important factor. INDIAN will remain as core even with increase in population growth. The need to restructure our economy to reduce reliance on labour and enhancing productivity, Jobs and more specifically GOOD JOBS will be important to support the strategic thrusts and to meeting the needs of Indians where multiple pathways for career and training progress are created in 21st century.

Education and training as merit good which provide positive externalities and social benefits will likely to continue. Increasing need to provide individual-based funding to support special attention segments of workforce needs should be priority by the state and central government. To enhance individuals' employability by supporting Lifelong Learning will be the keys to success of all the plans and policies.

d. TECHNOLOGICAL FORCES: NEW CHALLENGES & OPPORTUNITIES

Over the past 30 years advanced economies have become increasingly hungry for skills. New technologies have combined with intellectual and knowledge assets – the 'intangibles' of research, design, development, creativity, education, science, brand equity and human capital – to transform the economies AROUND THE WORLD. Across all sectors – manufacturing and services, high tech and low tech, domestic and internationally traded, public and private, large corporation and small enterprise – organisations have prospered by allowing highly skilled individuals the freedoms and flexibilities to deploy new technologies to rapidly create tailored products for increasingly sophisticated customers.

In some areas, a new generation of automated systems will replace humans, freeing us up to do the things we are good at and actually enjoy. In other domains, the machines will become our collaborators, augmenting our own skills and abilities. Smart machines will also establish new expectations and standards of performance. Of course, some routine jobs will be taken over by machines—this has already happened and will continue. But the real power in robotics technologies lies in their ability to augment and extend our own capabilities. We will be entering into a new kind of partnership with machines that will build on our mutual strengths, resulting in a new level of human-machine collaboration and co dependence.

IDENTIFYING & POSITIONING RIGHT SKILLS FOR BUSINESS

We stand at the threshold of a new renaissance in science and technology, based on a comprehensive understanding of the structure and behavior of matter from the nanoscale up to the most complex system yet discovered the human brain. Unification of science based on unity in nature and its holistic investigation will lead to technological convergence and a more efficient societal structure for reaching human goals. In the early decades of the twenty-first century, concentrated effort can bring together nanotechnology, biotechnology, information technology, and new technologies based in cognitive science. With proper attention to ethical issues and societal needs, the result can be a tremendous improvement in human abilities, new industries and products, societal outcomes, and quality of life.

The workforce of the future will be working in organizations with strong performance-based systems which incentivize both high performance and alignment to company strategies, values and work practices. Hiring will focus on attracting top talent that fits the organization culture. Cost-containment pressures may increase the focus on hiring talent with the right skill sets rather than internally training staff. Responsible financial decision making will be expected at all levels and from all employees.

The dramatic changes and challenges facing today related to growing unemployment, poverty, inequality, violence and environmental destruction demands more skills, abilities and creative problem solving potential. The importance of skills development of personal potential became significant when the future is uncertain. Ensuring academic success and also promoting healthy cognitive, social, and emotional development and resilience (including promoting opportunities to enhance school performance and protective factors; fostering development of assets and general wellness; enhancing responsibility and integrity, self-efficacy, social and working relationships, self-evaluation and self-direction, personal safety and safe behavior, health maintenance, effective physical functioning, careers and life roles, creativity)

TODAY IS AMAZING, AND THE FUTURE WILL BE EVEN MORE AMAZING.

World is in transition to a knowledge based economy and its competitive edge will be determined by the abilities of its people to create, share and use knowledge more effectively. Most business and thought leaders underestimate the potential of smart machines to take over millions of middle-class jobs in the coming decades," said Brant. Indeed, Gartner's 2013 CEO survey shows that 60% of CEOs believe that the emergence of smart machines capable of absorbing millions of middle-class jobs within 15 years is a "futurist fantasy," but Gartner itself predicts that smart machines will have a meaningful business impact in half that time.

- 75% of the current world wealth creation is human capital development.
- In ten years, knowledge will double every year.
- 25% of the work in can be done by anyone, anywhere in other countries.
- 30 years from now, we will need three planet earths to meet the natural resource needs of China alone.
- The most critical challenge countries is developing a competitive workforce development for high performance organisations.

a. **COMPANIES FOR OVER THE NEXT FIVE TO TEN YEARS**

- Flip the workplace – Enable the tooling to get the most out of your remote / flex workforce, create better activity based workspaces, and reduce your facilities cost.
- Seek productivity gains – IoT, hybrid intelligence, and robotics promise mass productivity gains over the next five years.
- Create innovation gravity – Use innovation best practices to make disruptive innovation part of how you do business.
- Learn faster – Leverage the tools that allow you to learn new skills faster.
- Embrace the quantified self for work – Seek the tools that will give you mass productivity gains.
- Rebalance work – Rebalance your workday for big productivity gains.
- Leverage hybrid intelligence – Learn to work with AI to dramatically increase your performance. Prepare for intimate computing that knows you and anticipates your needs.
- Enable robotic co-workers – Prepare for robots entering your workplace. They will offload mundane tasks and create different jobs.

b. DIVISIVE AND POTENTIALLY IMMOBILIZING CONCERNS OVER JOB SECURITY & INSTABILITY

- Many state workforce systems do not reflect market needs
- Public education is not adequately preparing individuals for the new knowledge based digital economy
- Globally workers must navigate a more uncertain career path
- Many low-income workers need supports to advance in their career path and living standard.
- Effective governance and accountability is lacking in developing the real potential.

c. FUNDAMENTAL CHANGES IN THE NATURE OF WORK AND MANAGEMENT RELATIONS

- Churning economy – every year a third of all jobs are in flux
- Skill shortages – during the economic downturn skill shortages continued in many industries and still do today
- Diverse workforce – new challenges and opportunities due to smart machines
- High productivity – slow job growth
- Outsourcing of jobs – puts a premium on innovation and skills

THE POTENTIAL DEVELOPMENT CHALLENGES IN THE CURRENT EDUCATION AND LEARNING SYSTEM

The first few weeks at after joining university are an exciting time for the new comer. There is a lot going on in terms of getting to know timetable, new subjects of study, meeting new class mates, lectures, and Students' and becoming familiar with the campus. From an employer's perspective, everything students do during the next three to four years counts. Employers expect graduates to not only have a strong academic background but also discipline based knowledge and a range of a range of employability skills and attributes. Examples include being an effective communicator, team player, leader and possessing interpersonal skills.

Institutions welcome students to campus and look forward to working with them over the next few years. Once students have settled in, we would like to take the first steps in considering student's future career. Students may not automatically know what they want to do when they finish their degree. Starting now gives them time to explore ideas, develop skills and get relevant experience. Lay the ground work now to reap success later on when applying for internships and graduate jobs.

Subject-specific knowledge is not the primary determinant of suitability for employment in most graduate recruitment, the main exceptions being engineering. Graduate recruiters want a raft of other skills in addition to a first degree and these override the degree specialism in many areas. Employers and their representatives consistently say that, to succeed at work, most people in future must develop a range of personal and intellectual attributes beyond those traditionally made explicit in programmes of study in higher education institutions.

Most of the Institutes envisioned as an academic institution of excellence that would facilitate and promote the technical education of its students from all over India. All the Institute aspire to serve as an inter-disciplinary institution for technical and research. But most of the Institutes struggle to give emphasis on synthesis, creativity, hands-on experience, innovation, communication and entrepreneurship qualities along with basic knowledge of engineering, technologies and scientific research. This is due to lack of expert support and a definite systematic approach ON HUMAN POTENTIAL DEVELOPMENT.

A NEED FOR SYSTEMATIC AND SCIENTIFIC SYSTEM

FOR YEARS PEOPLE BELIEVE THAT IT'S THE HUMAN BEING WHO HIMSELF CAN SOLVE THE ILLS OF HIS OWN DESTINY WITH WISDOM AND BALANCING SCIENTIFIC METHODS. THERE ARE MANY PRACTICAL PROGRAMS AND TECHNIQUES FOR TRANSFORMATION IN LIFE, RELATIONSHIPS, MENTAL STATES, WELL BEING AND FINALLY DESTINY FOR A LIVELIHOOD AS A SUPPORT SYSTEM FOR THE INDIVIDUAL AND NATION.

We still haven't convinced a wide range of people that social emotional development is just as important as physical and cognitive development in terms of life course, health and well-being . . . There is lots of evidence that social emotional climate, development, and learning are all steps in variety of life course phenomena, both in terms of how well schools do right through to the risk of latent depression later on in life, so from the standpoint of human development, it's indispensable.

The dawn of 21st century has brought in several opportunities globally. Many of them flourished in the past decade due to technological developments and resulted in today's lifestyle wherein Internet of Things and Digital Age is the buzzword. In spite of so much work that has gone into the technology and business process areas leading to ease of use and availability of resources, very little has been done in the area of Human Potential Development. Due to this reason, we're seeing a scarcity in bringing out innovative thoughts that can bring in efficiency in operations of these businesses.

Most countries have some kind of system but they vary greatly in levels of sophistication and detail on skill development not on human potential development. There has been a shift in the objectives of identifying future skill needs from human resource development planning to more general assessment of skills needs to inform all about human potential development and human capital investment. For example, there are many opportunities available to evaluate the knowledge level and aptitude of employees prior to hiring but very little is done and made available to the decision makers in terms of measuring the skill level that is needed for the particular job portfolio. Much of the above is due to the reason that there is limited availability of personnel who can design and apply skill development methods suitable for an organization. In many instances, the decision is taken based on budget available rather than trying to make an effort to identify the right set of skill development techniques needed for the business and deploying them efficiently.

Our study and research finding shows most countries have some kind of system but they vary greatly in levels of sophistication and detail on skill development not on human potential development. There has been a shift in the objectives of identifying future skill needs from human resource development planning to more general assessment of

competencies and skills needs to inform all about **HUMAN POTENTIAL DEVELOPMENT AND HUMAN INVESTMENT.**

Human Potential Development will help understand the dimensions of the "true destiny, true nature and true purpose." The powerful methodologies and approaches will assist in gaining awareness of true human nature. This awareness will attune, unify and focus on mental power and energies for life and living today and tomorrow.

The human potential development philosophy and action based on **1) "Scientifically helping people finding their core genius based on creative will and conscious mind" 2) "Figuring out what you love or like to do as young as you are" 3) "Creating one's ideal life in the context of desire fulfilment" 4) "Organising Life how to make living at it" 5) And finally "For the greatest possible mutual gain of Society and economy".**

Human Potential Development systems developed by us are sophisticated and simple. There is a clear trend to combine methods, mental models and frames, development perspective and sense of perception. Human Potential Development system for skill needs anticipation is based on information cascade generally accepted on powerful forward thinking models looking into the future. It is based on moving from an old frame of mind to a new one for 21st century digital knowledge super infrastructure.

We envision a National and International Prominence for Human Potential Development. Our goal is to create Human Potential Development Scientist and Skill Scientist to professionally help deploying scientifically proven techniques in the society, business and governments worldwide bringing in right human potentials, skills and also develop their potential and skill sets to cater the needs of the toughest challenges faced by the current society and economy.

Human Potential Development and Management System initiative, objective is to help individuals to make a successful transition into academic, personal and professional success, free from limiting habits and preconceptions to make them understand how the dreams, goals, values and highest aspirations can be integrated into personal, academic and professional life. The entire system will be facilitating the psychological, academic, emotional, career, social, and vocational development of individuals and by serving as mental health, academic, cognitive and enabling career to all.

Human Potential Development Science experts to guide the individuals to find many ideas and innovative ways to improve individual life by developing skills, understanding behavioral pattern and habitual ways of doing things to suit the circumstances and own interests. Human Potential Development Science will guide students to develop mental health and intellectual maturity with a step by step approach. Human Potential Development Science will make and keep-fit psychological skills and skills of mind. So that individuals will know what should be done at each stage to make practical improvements in day-to-day life. The objective is to show them how to develop individual inner potential so that they can live life in the way that individuals wish enjoy in life and success to develop their hidden potential.

The reengineering initiative is termed as "HUMAN POTENTIAL DEVELOPMENT OF THINGS FOR 21ST CENTURY" in the line of Internet of Things. Human Potential will be the predominant form factor in 21st Century. All profession will be reluctantly dragged into Human Potential of Things. It will be heavily incentivized to be Human Potential development of Things in the 21st century for human potential development for all. Collected data in 21st century on Human Potential development of Things is a treasure trove—for good or evil. Human error lapses in advocating Human Potential Development confidentiality and privacy will not be tolerated. Visits with Human Potential Development scientists will be more meaningful for everyone in 21st century. Human Potential Development will be more achievable for action, success and happiness.

Human Potential Development will be the basic building blocks of Academic, Institution and Corporate as economic drivers for 21st century. Nationally and internationally recognized programs in key areas of industry and business, social science, material science, governance etc. as the platform for world-class education, earning and research centers, which in turn will be home to remarkable collections of intellectual talent and attract public and private investment in 21st Century. Human Potential Development will attract private capital looking for human potential development requirements to turn into businesses, creating jobs and economic prosperity. These activities fuel the exciting, entrepreneurial environments that attract and retain the young people for the 21st century human potential development.

The discipline and profession of Human Potential Development will be matured in a way that has provided a wide range of education and skill development options for the next generation of professionals and expert. It provides a sample of the types of competencies that human potential development programs often strive to develop in preparing human potential development scientists to work in organizational and family settings. These areas of competency ensure that as human potential development scientists have a strong background and understanding of the history and recent developments in the discipline and profession of human potential development with very strong evaluation, critical

thinking, and systematic inquiry skills, professional skills essential for working in a range of organizational and family settings, and both a breadth and depth of content knowledge in key domains.

There likely will be many new ideas to inform our research, theory and practice, but human potential development and management will be at the forefront of what happens to us in the next 10 to 20 years. The major conceptual, theoretical and practical breakthrough will be the recognition and incorporation of human potential development into practice and research of **academic, emotional, career, employability competence** development. On the positive side, scientific counseling, coaching, mentoring, skill development, human performance development, life skills, career counseling, assessment and developmental life planning, assessments and consultation, industry-aligned curriculum design, enhancing the academics and professional skills, develop self esteem and values, leadership and entrepreneurial skills, physically and mentally fitness, wellness and assessment, student assessment tools and techniques, counseling techniques and methods etc… become central theme and a potent answer to the current crisis facing juvenile systems today.

Targeted interventions will be needed to enhance academic skills, career skills and job skills, provide entry employment opportunities, and improve access to critical support services such as academic and emotional competence, mental muscles development, individual and group counseling skills, conflict management, building emotion confidence, developing human intelligence zones etc… if we are to improve the economic position of self and large numbers of families. Understanding human behavior is a key to designing public policies that can improve the functioning of the nation's economy and the operation of its community and political institutions. The behavioral and social sciences have made great strides in contributing to that understanding, but this research continues to be poorly understood, both by the public and by elected officials. For many people, personal experience is a more-powerful influence than scientific evidence and methodologies, especially when the two conflict. But public policies must depend on clear evidence of how people and institutions act—not on people's impressions, wishes, or fears. Therefore, it seems likely that the social justice movement in the human potential development profession will continue to gain strength and will become increasingly international in focus.

The reality of building capacity for the 21st century is that we do not know what the work of the future will be like or how technology will influence health and financial issues. The challenge is to prepare men and women to think critically, to engage in mental activity, or habits of mind, that "…use facts to plan, order, and work toward an end; seek meaning or explanations; are self-reflective; and use reason to question claims and make judgments…" It may be that our task is not only to prepare them to "fit into the future" but to shape it. "…If the complex questions of the future are to be determined… by human beings…making one choice rather than another, we should educate- all of them - to join in the conversation about those choices and to influence that future…"

We hope this paper will further encourage the efforts of policymakers, program implementers, development experts, and youth leaders alike, as together we build a society in which every young person has a real chance to learn, work, and lead.

BACKGROUND

Since 2011 the Human Potential Development Science Corp team has been working with employers, training consultants, education colleges and government to design and deliver a course that will provide young people with the skills, attitudes and behaviours they need to secure and sustain their future. Human Potential Development Science Corp is created with a vision to provide assured jobs through transformational education, learning, skill development programs like HUMAN POTENTIAL DEVELOPMENT PROGRAM (HPDP) and SKILL ENGINEERING AND MANAGEMENT DEVELOPMENT PROGRAM (SEMDP) with a focus on various unique game-changing Skill 21st Century Development Model. The profession is first in line helping people with great passion and enthusiasm, as a safe career that is on high demand in the 21st Century knowledge economy locally and globally.

We scanned the academic literature from the past 1 to 5000 years to clarify the most up-to-date definitions of and the recently reported findings on human potential. We conducted a series of searches in the Education Resources Information Center and EBSCO host databases. These databases provided results for dozens of major academic journals, including American Educational Research Journal, Economics of Education Review, Educational Psychologist, Journal of Educational Measurement, and Review of Research in Education, Sociology of Education, and Teachers College Record. We also searched individually American Journal of Sociology, American Sociological Review, and Education Policy Analysis Archives. We then reviewed empirical, original, peer-reviewed research that focused on the effect of these attributes on academic success in prekindergarten through grade 12. Our objective with this review was not to estimate an overall effect size of each attribute on critical academic outcomes, as a meta-analysis would. Rather, we sought to provide readers with a general sense of the definitions of each attribute, the measurement strategies researchers tend to employ, and how each attribute may be related to educational attainment.

Announcements

INDICON – 2017: 14th IEEE India Council International Conference 2017

IEEE INDICON conference is an annual event started by IEEE India Council. Every year it has been hosted by one of the Sections in India, in the areas of Computer Science Engineering, Electrical Engineering, as well as Electronics and Communication Engineering. The 14th edition of the conference, INDICON-2017, is organized by IEEE UP Section at IIT Roorkee during 15-17 Dec 2017.

Over the past few years, INDICON has emerged as a well-recognized and an eagerly anticipated event in the country because of its high quality technical sessions, keynotes and also for the networking opportunities that it provides. Authors are invited to contribute original research papers. The papers that are accepted after review, registered and presented in the conference will be included in the Proceedings of IEEE INDICON-2017. All accepted papers and posters presented in the conference will be published in IEEE Xplore.

Important Dates:
Paper Submission: Jun 20, 2017
Notification of Acceptance: Oct 05, 2017
Camera Ready Version: Oct 20, 2017
Tutorial Proposal: Jul 15, 2017
Tutorial Announcement: Aug 15, 2017

For more info, please visit the conf. website at http://www.iitr.ac.in/indicon2017/

IEEE TENSYMP 2017 – Technologies for Smart Cities

IEEE TENSYMP 2017, the Spring conference of IEEE Region 10, will be held during 14-16 July 2017 at Le Meridien, Cochin, Kerala, India. IEEE TENSYMP 2017 will be the meeting point of researchers, industry and the Government and will explore the latest developments in the technologies for Smart cities. Cochin itself has been selected by Government of India, to be developed as a Smart city. TENSYMP 2017 will also feature high quality tutorials, workshops and Industry sessions, as well as keynotes from prominent research and industry leaders.

The call for papers is open and the important dates are:
Paper submission (extended) : 10 March 2017
Paper Acceptance notification: 14 April 2017
Camera-ready papers: 5 May 2017
Workshop/ Tutorial/ Industry forum proposals: 15 March 2017

For more info, please visit the conf. website at http://www.tensymp2017.org

ALL IEEE Young Engineer Humanitarian Challenge 2017

All IEEE Young Engineers' Humanitarian Challenge (AIYEHUM), organised by the IEEE Region 10 (Asia-Pacific), is a project competition where young scientists and engineers identify a community problem, develop technological solutions to address them and eventually implement it with the support provided by the IEEE R10. The principal objective of AIYEHUM is to inspire young professionals/engineers to become socially responsible and be engaged in developing technological solutions which are cost effective and sustainable; improve living conditions and livelihood of people thus making a difference in peoples' lives. AIYEHUM is open to science/engineering professionals and graduate/undergraduate students, from Asia-Pacific (IEEE R10) countries, who are 35 years or below the age of 35 years in 2017.

The deadline for submission of proposal is 25th April 2017

Important Dates:
Deadline for Project Proposal Submission -- 25th April
Notification of short-listed projects -- 5th June
Acknowledgement of notification by selected teams -- 19th June
First progress report submission deadline -- 28th July
Second progress report submission deadline -- 26th August
Announcement of Top 3 teams -- 15th October

For more details please visit http://aiyehum.ieeer10.org/

IEEE IC WIE Awards

Based on the proposal by Dr Rajashree, IEEE IC VC (WIE) the following two IEEE IC WIE Awards are being instituted in the name of Late Shri Pralhad P. Chhabria, Founder President, Hope Foundation and Research Centre (Hope Foundation) -- A project by Finolex in association with IEEE WIE AG - India Council and IEEE WIE AG - Pune Section. These awards are designed to recognize and applaud outstanding female student/s of the nation, specifically from the faculties of science, engineering or technology as well as young women engineers who are in their early career stage.

Award I -- Best Outgoing Female Student (from Faculty of Science / Technology / Engineering) and
Award II -- Best Women Engineer / Scientist / Technocrat (from working professional in early career stage).

These awards shall be annual in nature comprising of Rs. 1.25 Lakhs each (sponsored by Hope Foundation) with a medal and a certificate. IEEE IC will play a major role in the award process.

Formal call for nomination and other details will be announced soon.

IEEE Group Medical Insurance Policy 2017 - Date Extended to 31st March 2017 for enrollment.

As you are aware that IEEE India Office has introduced a very attractive medical insurance policy for IEEE members from India. This policy is now extended to students as well. Here are the unique benefits of this group medical insurance scheme as compared to individual medical insurance policies available in the market today.

a. Medical check-up is NOT REQUIRED for enrollment of an eligible member or their dependents

b. Enrollment is available for any member from ages 18 to 85. A total of 7 members may be enrolled i.e. member, spouse, up to 3 children, parents or parents-in-law- all in a single policy. Dependent children between ages zero to 25 are admissible. A member with an existing policy or their dependent parents/ parents-in-law can continue renewing even beyond age 85.

c. Pre-existing diseases (PED) are covered from day one if the member held an IEEE membership any time prior to the current subscription. Only ensure renewal with the same membership number same as that held earlier. Else cover for PED begins after 6 months

d. Only 10% co-pay for Parents irrespective of their age.

e. It is easy to subscribe. Annual premium can be paid in Indian Rupees through the payment gateway (via credit card, debit card, online transfer, etc.). Simply goto the IEEE Sponsored Insurance Pages website (http://www.ieee.org/membership_services/ membership/discounts/group_insurance.html)

Some important and useful documents related to this are available on IEEE India Council website (http://sites.ieee.org/indiacouncil/medical-insurance-documents/)

You may contact Yathi (Yatheendranath Tarikere <y.tarikere@ieee.org>) or Nagaratna Nagaratna Pai <nagaratna.pai@ieee.org> from IEEE India Office for any clarifications.

New IEEE Collabratec Communities

IEEE Collabratec ™ has established new Collabratec communities centered on Block Chain and centered on IEEE 5G. Both are free to all. If you are interested in joining over 80,000 of your colleagues to interact on IEEE Collabratec, see https://supportcenter.ieee.org/app/answers/detail/a_id/1063/~/what-is-ieee-collabratec

2017 SIGHT Projects Proposal Deadlines

The SIGHT Steering Committee is soliciting proposals for project funding. The committee will review proposals during three periods in 2017 and will grant awards of US$500 - $19,999.

Submission deadlines:
- Period I, March 15, 2017
- Period II, May 15, 2017
- Period III, August 15, 2017

Please see the Request for Proposals at https://goo.gl/sdpbS1

Funding for Entrepreneurship Activities

One of the initiatives of IEEE R10 for 2017 is to promote entrepreneurship activities organised by Sections.

R10 encourages the sections to have entrepreneurial activities in the section and invites to apply for funding through an on-line application, which can be accessed at http://ieee.fluidsurveys.com/surveys/R0/entrepreneurship-activities-plan-ieee-region-10/

Terms and Conditions

1. You can apply for funding for one activity or many activities. Please indicate the funds requested from R10 in USD. Based on your activities, funding will be decided (up to a maximum of US$1000 per Section). Since funding is limited, a selection panel will review all proposals and select activities and proposals for funding.

2. Large section must cover at least 50% of proposed project(s) cost. Medium section must cover at least 25% of proposed project(s) cost. Small section will be supported 100% of proposed project(s) cost by the IEEE R10.

3. Recipient of support fund should submit activity reports and expense reports within 1 month after completion of the project(s).

4. Deadline for submission of proposal: 17th April 2017.

ICNL Readers Quiz-17q1

To increase and encourage readership, this quiz is being conducted. Participate in the "ICNL Readers Quiz-17q1" and win Two Amazon Gift Cards of worth Rs. 500/- each.

The "ICNL Readers Quiz – 17q1" has 12 questions for which answers can be found in the India Council Newsletter issue of Jan-Mar 2017 at http://ieeecs-madras.managedbiz.com/icnl/17q1/icnl-17q1.pdf and also available in the gDrive folder named "icnl-newsletters" shared at https://goo.gl/2cnw8A

TWO lucky readers from those who provide correct answers to a minimum of 10 questions will get Amazon Gift Cards of value Rs. 500/= each. The prizes for the "ICNL Readers Quiz – 17q1" are sponsored by IEEE Computer Society Madras Chapter.

QUESTIONS

Q1. Name the astronaut who had addressed in the IC Young Professionals in the virtual interactive talk

Q2. ---------- is the Director of IEEE India Office in Bangalore

Q3. In INDICON-2016, the focus of the panel discussion was on ----------

Q4. ---------- is the start-up being bought by Intel for $15.3 billion

Q5. Which Section in 2016 had bagged seven Richard E Merwin Scholarships out of 10 in the region R10

Q6. Who in 2016 received the IEEE Oceanic Engineering Society (OES) Presidential Award?

Q7. Who is the chairman of IEEE India Council PES chapter?

Q8. What was the reason for some of the world's biggest websites like Quora, AOL, and ESPN were down on Feb 28.

Q9. Bill Gates has been the world's richest person for 18 out of past ----- years by Forbes.

Q10. Who is the new owner of Nokia brand?

Q11. Columbia University scientists have said, a single gram of DNA could pack over ---------- million GB of data

Q12. In the IEEE Group Medical Insurance Policy 2017, member enrolment is available from ages 18 to ----------

HOW TO PARTICIPATE

Please send your answers to these 12 questions by email to ieee.icnl@gmail.com **on or before 15th Apr 2017** with subject as "ICNL Readers Quiz – 17q1"

Provide the answers to all questions by writing question no and the related answer (No need to write the question. Just the no. such as Q1, Q2, Q3 is sufficient). If you do not know the answer, pl. enter "DO NOT KNOW"

After answering all the questions, pl. provide the following information relating to the quiz participant.

Name
IEEE Member No
Type of Member
Designation (If student pl. write as Student)
Institution / Organisation Name
Town/City
Email
Contact Phone No.

TERMS & CONDITIONS: Incomplete & late entries will not be considered. Decision of the IEEE INDIA INFO Editor is final.

LAST DATE TO RECEIVE THE ANSWERS IS 15th Apr 2016

Two lucky winners of the "ICNL Readers Quiz – 17q1" will get Amazon Gift Coupon of value Rs. 500/= from **IEEE Computer Society Madras Chapter**

Become a member of the world's leading organization of computing and information technology professionals when you join IEEE Computer Society, the largest society within IEEE. Membership to the Computer Society includes FREE access to 3,500 self-paced online technical and business courses, FREE access to 1,100 online technical and business books (600 titles from Safari® Books Online and 500 titles from Element K® Press), six e-newsletters, 12 monthly issues of *Computer* magazine, discounts on 170+ Society-sponsored conferences and two software development certifications, up to 50 percent off subscriptions to 26 peer-reviewed journals and magazines, and more. Network and learn from fellow professionals through automatic membership to one of 350+ worldwide chapters, and participate in more than 40 technical committees. Field of Interest: All major areas of computing and information technology: computer hardware, software, multimedia, IT, security, networking, mobile computing, and more.

This IEEE CS is a sponsoring society of the IEEE Council on RFID, IEEE Biometrics Council, IEEE Council on Electronic Design Automation, IEEE Nanotechnology Council, and IEEE Sensors Council.

As the 50% membership fee is applicable from 15th March, for the period Apr-Dec 2017 (9 moths), the applicable fee is USD 4 for the student members and USD 30 for the professional members. The student members will get full access to the IEEE CS Digital Library as an add-on benefit.. Join the IEEE Computer Society

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Useful IEEE Links

- 2017 IEEE Membership and Society Membership Dues http://www.ieee.org/membership_services/membership/join/join_dues.html
- IEEE Society Memberships: http://www.ieee.org/membership_services/membership/societies/index.html
- Global Benefits Finder: http://www.ieee.org/membership_services/membership/benefits/index.html
- IEEE Student Activities: http://www.ieee.org/membership_services/membership/students/index.html
- IEEE Geographic Unit Formation Policies and Petitions http://www.ieee.org/societies_communities/geo_activities/forms_petitions/forms_petitions_index.html
- Student Branch Officer Responsibilities and Administration http://www.ieee.org/membership_services/membership/students/officers.html
- IEEE Region 10: http://www.ieeer10.org
- IEEE Contact & Support: http://www.ieee.org/about/contact_center/index.html
- IEEE Support Center: https://supportcenter.ieee.org
- IEEE Websites / Sitemap: http://www.ieee.org/sitemap.html

Guidelines for submitting reports and articles to get published in the IEEE INDIA INFO, the India Council Newsletter (ICNL)

- Please submit the event reports within TWO months of its happening. Older events reported may be ignored.
- The matter may be in doc / rtf / txt format. Please avoid other formats such as pdf, jpg as they will not be considered.
- Please use SINGLE column format (while the report is prepared).
- Please avoid embedding the photos in the document relating to event reports. However, images referred in articles alone may be embedded at appropriate places in the article document in addition to sending them separately.
- Please send the event photos (typically one/two best) separately (even in they are included in the report).
- Preferred format for photos is "jpg". Please avoid sending the photos in "bmp", "png" formats.
- Photographs in digital form should not to exceed 1024 pixels in width. You may use any photo editing software (MS Office Picture Manager is quite useful) to re-size the image. This will reduce the file size of the images considerably. Pl. avoid sending large size photos (Sometimes we get files even up to 6 MB size). We generally recommend file sizes less than 500K.
- Provide your name, full affiliation, membership no. and email id at the end of the document.
- Send the matter by email with the subject: From <Section / College Name in short form> -- Report on <Event Name (short name is OK) & Date> eg: "From Madras Section / SSNCE -- Report on Conf on Wireless Networking dt. 10-11, Feb 2017"
- Please send the matter by email to ieee.icnl@gmail.com
- Please note that the matter sent to other email ids may get ignored and may not be considered.
- Please submit the matter for publication latest by 8th of the publication month (currently Mar, Jun, Sep, Dec as ICNL is a quarterly) to facilitate inclusion in that quarter's issue of IC Newsletter.
- Pleae note that while all efforts will be made for publishing, due to certain practical constraints, the actual publishing may be delayed.
- We will be constrained to ignore the submitted materials, if they do not follow the above guidelines.
- Please co-operate with us by adhering to the guidelines specified.

IEEE India Council Website

The website of the IEEE India Council (IC) has been redesigned using the Wordpress content management system and is hosted on the IEEE webserver at http://sites.ieee.org/indiacouncil/ with the efforts of the web master Dr. Suryanarayana Doolla of IIT Bombay. The readers may find the following links of the IC useful.

Home: http://sites.ieee.org/indiacouncil/
Executive Committee: http://sites.ieee.org/indiacouncil/about-ieee/executive-committee/
Sections: http://sites.ieee.org/indiacouncil/about-ieee/sections/
Chapters: http://sites.ieee.org/indiacouncil/about-ieee/chapters/
Announcements: http://sites.ieee.org/indiacouncil/category/announcements/
Events: http://sites.ieee.org/indiacouncil/events/
Newsletter Archives: http://sites.ieee.org/indiacouncil/newsletter/newsletter-archives/
Conference Norms: http://sites.ieee.org/indiacouncil/conference-norms/
INDICON: http://sites.ieee.org/indiacouncil/indicon/
Student Activities – Awards: http://sites.ieee.org/indiacouncil/student-activities/awards/
M V Chauhan Student Paper Contest: http://sites.ieee.org/indiacouncil/student-activities/mvc/

For Private Circulation

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