

# BEACON



THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC. IEEE

IEEE DELHI SECTION NEWSLETTER

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## ANNUAL GENERAL MEETING



*Dr. S. Mukhopadhyay (Left) presenting memento to Dr. D.P.S. Seth, Shri R.K. Vir, Chairman, Delhi Section (Second from right) presided.*



*Dr. O.P. Chhabra, elder IEEE member (right) felicitating Shri H.L. Bajaj (middle) with a memento*

The Annual General Meeting (AGM) of the IEEE Delhi Section was held at 11:30 AM on January 19, 2003 (Sunday) at India International Centre Annexe, New Delhi. It was attended by 48 members. The meeting was followed by a Felicitation Function to honour Sh H.L.Bajaj, Chairman, Central Electricity Authority (Ex-officio Secretary to Govt. of India) and Dr D.P.S.Seth, Member Services, Telecom Commission (Ex-officio Secretary to Govt. of India), on their recent elevation.

The deliberations of the AGM are as follows:

### 1. **Welcome Address by the Chairman, IEEE Delhi Section**

1.1 Dr R.Balasubramanian, Chairman, IEEE Delhi Section welcomed the members and their spouses to the AGM. He briefed the members on the various activities organized during 2002. He mentioned that the Section had organized 56 events, of which 25 were technical, educational and professional activities.

1.2 Region 10 Meeting for the year 2002 was held in April at Bangkok, Thailand which was attended by Section Chair, Dr R.Balasubramanian. Region

10 Student Congress was organized in July 2002 for the first time at Singapore. It was attended by two students of the Section and Students Activities Chair, Dr Mini S.Thomas. IEEE Sections Congress was held in October 2002 at Washington DC. The Section Chair, Dr R.Balasubramanian and Section Secretary, Dr Ram Nath attended the Sections Congress. Section Chair along with the Washington Section Chair made a joint presentation on the concept of Sister Section at the Congress, which was widely appreciated.

1.3 Section membership grew from 1947 (31.12.2001) to 2087(31.12.2002) during the year. Section brought out 12 issues of the monthly electronic newsletter ieedelhinews. Section Chair congratulated Dr S.Mukhopadhyay, Electronics Coordinator for maintaining the timely release of ieedelhinews. Section brought out one special issue of BEACON, which was upgraded from Newsletter to House Journal. Section Chair congratulated Dr Ram Nath, Public Relations and Publication Standing

Committee Chair for this initiative. The major expenditure on this publication was met through advertisements from various sponsoring organizations.

## 2. *Confirmation of the minutes of the last AGM held on January 19, 2002*

2.1 The minutes of the last AGM were approved as proposed by Mr Man Mohan S. Puri and seconded by Dr Ram G. Gupta.

## 3. *Presentation of Activity Report by the Secretary*

3.1 Dr Ram Nath, Secretary presented the report on the activities of the Section during 2002. He congratulated Dr S.Mukhopadhyay on receiving the prestigious 2002 RAB Leadership Award of IEEE Headquarters, PES Region 10 Outstanding Engineer Award and PES Outstanding Chapter Engineer Award for 2001. He also congratulated Mr M.M.S.Puri on receiving Outstanding Engineer Award of PES\_IAS Delhi Chapter for 2002. Delhi CAS-CS Societies Chapter was adjudged the Best Chapter and AES/COM/LEOS India Council Chapter was adjudged the Outstanding AES Chapter. Delhi Section had instituted JK Pal Memorial Best Student Award from this year. These awards were presented by Mr Raj K. Vir, Section Vice Chair to Mr Deb



(L to R) Shri Ram Nath, Secretary, Dr. R. Balasubramanian, Chairman, Shri R.K. Vir, Vice Chairman & Shri P.V. Ekande, Vice Chairman in the AGM

Bardhan, of NSIT, Ms Deepa Agarwal, of Engineering College, Ajmer and Mr Mustaffa Turra, of JMI for their contribution to Student Branch activities and for overall curricular and extra-curricular activities.

3.2 Prof.S.S. Murthy (General Chair of PEDES) of IIT Delhi informed the members that the accounts

of the International Conference on Power Electronics, Drives & Energy Systems (PEDES-96) held in Delhi and jointly organized by IIT Delhi, IIT Kanpur, IEEE Delhi Section & IEEE UP Section, have been audited and as decided by the PEDES core organizing committee, the surplus generated by the conference will be utilized for setting up annual awards to the top



Shri M.M.S. Puri (Left) receiving the Award from Prof. B.P. Singh, Past Chairperson of PES-IAS Delhi Chapter.

M Tech Students in Power Electronics in IIT Delhi and IIT Kanpur to be awarded every year and the balance amount to be shared between IEEE Delhi Section & IEEE UP Section. The chairman and members congratulated Prof. Murthy for organizing this mega international conference so very successfully. Prof. Murthy suggested that PEDES could be organised as a regular conference every year in India.

3.3 After discussions, the report was approved as proposed by Dr S.Mukhopadhyay and seconded by Mr M.M.S.Puri.

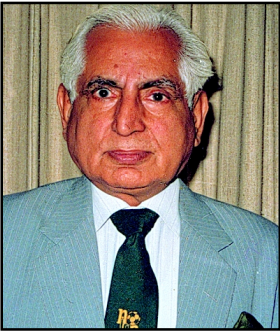
## 4. *Presentation of Financial Report by the Treasurer*

4.1 Section Treasurer was not able to attend the AGM, thus, the Section Chair, Dr R.Balasubramanian presented the audited Financial Report for the year ending on 31st December 2002. The one-page report covered the various transactions under 'Receipt' and 'Disbursement' heading along with the corresponding figures for the previous two years, i.e. 2000 and 2001 for the purpose of comparison.

4.2 After discussions, the report was approved as proposed by Dr B.P.Singh and seconded by Dr O.P.Chabra.

(Continued on page 3)

## FROM THE DESK OF CHAIRMAN



As you are aware, BEACON Publication of IEEE-Delhi Section is being released regularly which provides latest information about The Institute, besides articles and information on the topics of interest. It is a useful media of communication amongst individual Member & executive committee members of IEEE-Delhi Section and in particular to enlarge the activities of IEEE.

I am glad, that in this endeavour, the Publication Committee is releasing the June 2003 issue of BEACON with active cooperation of all EXECOM members. I hope that readers will find this issue interesting.

The membership statistics released for Delhi section after the March end are quite disturbing. Our membership strength has come down drastically, particularly more so amongst the student community. This is mainly due to a very steep hike in student membership fees. In the last congress at Washington this issue was discussed and it is expected that there may be reduction from next year.

We have to continue with zeal membership drive. We have to market the benefits, which the membership offers.

I hope members are aware of the financial benefits of Member Get A member Scheme (popularly known as MGM scheme) If you are able to recruit many members you may have to pay much less during next year as dues Participation in the various programmes of IEEE may be taken up more seriously by all our IEEE members / Electrical & Electronic Engineering Community as such. In this context, there is an attempt to make each issue of BEACON more meaningful with a different theme for each issue.

TENCON 10 is round the corner at Bangalore. The details are available elsewhere in this Issue. You may like to participate and benefit from high standard of technical contributions from amongst the cream of engineering talent from the entire South East Asia.

I wish all the success and congratulate the editorial board for their efforts in bringing out the BEACON regularly.

With kind regards,

Delhi  
1st June 2003

**R.K.VIR**  
**CHAIRMAN**  
**IEEE DELHI SECTION**

*(Continued from page 2)*

5. Policy recommendation for participation of secondary/additional delegate to important IEEE administrative meetings
  - 5.1 Dr R.Balasubramanian, Section Chair, presented the policy recommendation for participation of secondary/additional delegate to important IEEE administrative meetings. The policy was earlier approved by the Section Executive Committee.
6. Introduction of the new Executive Committee
  - 6.1 Since no petition was received, the Slate proposed by the Section Nomination Standing Committee was approved.
  - 6.2 The new Executive Committee members under the Chairmanship of Mr Raj K.Vir were introduced to the House.



*Dr. S. Mukhopadhyay (Middle) receiving 2002 RAB Leadership and other Awards from Dr. D.P.S. Seth (Left) Dr. Ram Nath is also seen.*

- 6.3 Mr Raj K.Vir chaired the Felicitation Function to honour Dr D.P.S.Seth and Mr H.L.Bajaj.
- 6.4 Dr Ram Nath, Secretary thanked the Chief Guests, Members and their family members for their participation in AGM.

Dr Ram Nath  
Secretary, Delhi Section

## Student Activities

Greetings! The student membership of IEEE Delhi section had reached new height this year with the number going above 800. But primarily due to the increase in the membership dues, and hence non-renewals, the membership has subsequently dropped considerably. All the Delhi based Student branches and PEC Chandigarh are doing well, but the other student branches, especially BITS Pilani, Kurukshetra, Jodhpur, Ajmer and Jaipur have to bring up the membership. IEEE EXECOM members have expressed a desire to visit the student branches and encourage the students. The student branches who are interested to avail this opportunity may kindly get in touch with me in the month of June /July.



Prof. Mini Thomas and Shri P.V. Ekande with student participants.

The J.K. Pal memorial best volunteer award was instituted in 2002 and only 3 student branches, Ajmer, NSIT and JMI availed of this opportunity. I hope that this year more student branches will nominate candidates for this award.

This year, we initiated the Biannual student meet of the student branches of Delhi section, with the first meeting held on 22nd February at Jamia Millia Islamia. The meet was aimed at an active interaction and a better networking between IEEE student members under Delhi Section. The meet attracted participation from six different student branches namely MNIT Jaipur, Delhi College of Engineering, Netaji Subhash Institute of Technology, Amity School of Technology, IGIT(MIT) and JMI and over 60 students from these branches attended the meet.

The meet had a lot of interesting and enjoyable events. First of them was a Theme Talk delivered by Mr. Jacob Varghese, Former Head corporate planning, Indian Oil Corporation, on one of the most interesting topics today 'Strategic Business Planning' He explained to the students, how to plan and achieve goals by making strategies and implementing them, with the help of a

very interesting presentation. Queries followed this presentation to which Mr. Varghese answered patiently and also shared some of his personal life experiences. Continuing the topic, it was explained how to apply Strategic Planning to organize IEEE activities under the IEEE Student Branch. Post lunch session had a group discussion followed by a personality test and team building events that everyone enjoyed. The student meet came to an end with a positive note and better networking between students under IEEE Delhi Section, with the next meeting scheduled in Jaipur in August.

The new student branch at Amity School of Engineering and Technology is doing exceedingly well and 2 more student branches are waiting to be formed in Delhi. The students benefit a lot from IEEE membership and hence I urge the student community to come forward and enjoy the benefits.

Prof. Mini S. Thomas,  
Student and Educational Activities standing  
committee Chair

### Collection of thoughts

**"If you have knowledge, let others light their candles at it"**

**\_ Margaret Fuller**

**"It is possible to fail in many ways...**

**While to succeed is possible only in one way"**

**- Aristotle**

**"It is unwise to be too sure of one's own wisdom,  
It is healthy to be reminded that the strongest might  
weaken  
and wisest might err"**

**- Mahatma Gandhi**

# Business Process Outsourcing - What, Why and How

Daman Dev Sood

Consultant, Tata Consultancy Services

BPO (Business Process Outsourcing) once had a clear place in the executive's toolkit-it was used to achieve cost savings in transaction-intensive, back office business processes. That's all changed. BPO is emerging as a flexible and powerful approach that business leaders can use to achieve a wide range of tactical and strategic aims.

Business process outsourcing is not new; some leading edge relationships are more than a decade old. BPO can be defined simply as:

Contracting with an external organization to take primary responsibility for providing a business process or function.

BPO goes further than technology infrastructure or even applications. The outsourcing provider takes primary responsibility for ensuring that the process works, interfaces effectively with other company functions, and delivers the outcomes intended.

Over the years business process outsourcing has become wrapped in conventional wisdom. Traditionally, organizations applied simple rules about when to use BPO:

- Outsource non-core activities,
- To niche providers who offer best practice processes
- In order to achieve cost savings, and
- Improve management's focus on more strategic issues

Today, these rules no longer apply. The definition of business process outsourcing hasn't changed since its inception, but its potential reach and impact have altered significantly. The BPO universe is expanding. Today, executives use BPO to meet a diverse set of objectives, from tactical to strategic. Some still contract out narrow processes to achieve cost savings. But others have begun to use BPO for very different goals. They are using it to drive consistent management practices through global operations, to start up new operations quickly, to tap new sources of revenue, and to catalyze organizational change.

*BPO can be used to accomplish the following:*

- **Speed to market.** Start-up firms can use BPO to launch their businesses, enabling them to be fully operational with state-of-the-art capabilities in weeks rather than months.

- **Competitive capabilities.** Established organizations can use BPO to turn also-ran processes into world-class capabilities through standardization, centralization, and new technology.
- **Cost savings.** Firms can also use BPO to significantly lower costs, enabling them to redirect money to more strategic aims.
- **Growth stimulus.** Innovative companies can use BPO as a catalyst for change to help stimulate company growth by achieving unique, competitive capabilities.
- **Revenue.** Firms are also establishing joint ventures with their BPO providers to leverage some of their own assets and knowledge in exchange for a share of BPO revenues.

The most commonly used areas for BPO are

- Human resources
- Learning and training
- Customer relationship management
- Finance and accounting
- Supply chain management
- Procurement
- Logistics

It's often difficult to measure outsourcing results precisely, but some studies show that many outsourcing arrangements fail to meet managers' expectations. Many organizations admit that they had limited success in achieving their objectives.

Executives and outsourcing providers alike lack a comprehensive framework for designing an effective relationship. Many concentrate on one aspect of the deal-like cost-reduction goals or the need for technology investment-to the exclusion of other important factors.

As the uses for BPO have expanded, however, so too has the confusion about how to make it work. The old formulas about when to use BPO, how to structure deals, how to manage relationships, and how to capture value no longer hold. In order to be successful, executives must

configure a host of complex choices into a unique "value equation" that fits their situation.

This is no simple task. A little help is available by answering the following questions:

- What can organizations accomplish through business process outsourcing?
- How can organizations create the right relationships?
- What steps can they take to ensure they meet their objectives?

To structure an effective business process outsourcing relationship, executives must further address the following four key questions:

- How deep should the relationship be?
- How broad should the relationship be?
- To what extent will we transfer our way of working to the outsourcing provider?
- To what extent will we transfer our assets to the outsourcing provider?

### **BPO Success**

Highlighted below are a number of success stories (first one, in details) to illustrate how organizations can achieve very different objectives by crafting their relationships carefully.

#### **XYZ, an Internet search engine company meets its needs with conventional outsourcing**

The firm's sole outsourcing objective was to reduce the cost of its e-mail customer support division. Executives turned to a niche provider, an India-based customer service outsourcer, for help. By taking advantage of India's lower wage ranges, the provider substantially reduced xyz's service costs.

Despite the obvious geographic distance, xyz needed only minimal interaction with its provider to manage the relationship because the companies clearly spelled out responsibilities, service levels, and pricing structures in their contract. XYZ was able to disseminate training materials, monitor service, and negotiate new pricing structures via the web and telephone. Because the processes were performed XYZ's way, most of the communication concerned training.

It is estimated that by going with an off-shore provider, labor costs can often be reduced by as much as 40 percent.

**Rhodia** to drive toward efficiencies and best-accepted practices

**Deutsche Bank** to tap outsourcing for new expertise

**Universal Leven** to start up at speed through Outsourcing

**TiVo** to push the competitive envelope

Outsourcing, today, has three different types: conventional, collaborative, and transformational.

**Conventional Outsourcing:** This entails using a niche provider to provide a narrow scope of services through a contractual relationship. Most frequently companies use the provider's processes to minimize costs. They may or may not transfer people and assets to the provider. AltaVista uses conventional outsourcing for e-mail support services.

**Collaborative Outsourcing:** Collaborative outsourcing involves a cooperative, flexible relationship with the outsourcing provider offering a broader scope of services. The firm and its partner frequently define these services jointly. Again, the firm may or may not transfer people and assets to the provider.

**Transformational Outsourcing:** This high-payoff outsourcing initiative involves a deep commitment between the firm and its outsourcing partner to radically transform the firm's enterprise-level outcomes. The two companies jointly define a broad range of processes they will use and may also share in a joint venture that manages assets and employees that both contribute.

The biggest challenge in the way of a successful outsourcing relationship is the Change Management at the parent organization.

Few tips to overcome this are

- Take your change management pulse Implement formal programs to change behavior on both sides
- Pilot new processes to build consensus
- Ensure that the business objectives of both the organizations are completely aligned, and so is the outsourcing decision too
- Develop Your Own Roadmap for Implementation
- Broaden your view about outsourcing possibilities
- Involve senior executives in laying out the operating principles
- Borrow tactics from related fields

- Leave an escape route open

## India is the Place of Opportunities

It is estimated that the revenue in the country's call center and BPO industry grew by 70 percent during the 2001-2002 period to a total of \$1.46 billion, and should jump to \$16.94 billion by 2008, capturing more than 10 percent of the global market.

And the reason is

- Lower operating costs (less than one fifth of the similar costs in US)
- Higher "quality" of manpower (young, typically educated, graduate-level personnel with a capacity to learn, characterize the Indian ITES workforce)
- Excellent English speaking skills
- Improving telecommunication infrastructure
- Even the Government of India's EXIM Policy 2003 supports this

Prominent Indian BPO/ ITES\* companies include

**OneSource (ICICI company) - World's First company to bag COPC (Customer Operations Performance Center) certification for back office processing**

**Progeon (Infosys company)**

**Daksh**

**Spectramind (Wipro company)**

**eServe (HCL company)**

**MysourceE**

**Convergys**

**eFunds Corporation**

**EXL Service**

**Karvy**

**Trac Mail**

**World Net Services**

**\*IT Enabled Services**

Sources: Internet Research

Views expressed are author's own and do not represent his organization in any way.

## IEEE DELHI SECTION MEMBERSHIP STATISTICS AT A GLANCE

(as in end-May 2003)

**Total: 1487**

Membership Grade	Strength
Honorary Member	2
Fellow	2
Life Fellow	1
Senior Member	131
Life Senior Member	9
Member	459
Life Member	2
Student	602
Others	279

Chapter	Strength
CAS004: Circuits & Systems Society – CS023: Control Systems Society	38
C016: Computer Society	191
PE031: Power Engineering Society – IA034: Industry Applications Society	113
COM019: Communications Society	119
EM014: Engineering Management Society	26

Student Branch	Strength
2591901: DCE, Delhi	128
2590001: IIT, New Delhi	35
2534811: NSIT, New Delhi	60
2534861: JMI, New Delhi	68
41511929: Amity, New Delhi	79
2503861: BITS, Pilani	6
2591103: MBM Engg. College, Jodhpur	0
2518473: Engg. College, Ajmer	6
2531463: MR Engg. College, Jaipur	7
2510361: REC, Kurukshetra	0
40336430: SJPM LIET, Radaur (Removed)	0/0
41427869: CR State College of Engg., Murthal	17
2518443: PEC, Chandigarh	48

## SECTIONS CONGRESS 2002

IEEE Sections Congress 2002 was organized from Oct 18-21 at Washington DC. It was attended by Section leadership from all 10 regions. The main objective of the Congress was to create a global community. It gave us an opportunity to network with other Section leaders from around the world and IEEE staff members.

The Congress schedule was designed to be user-friendly. There were core training programs, plenary sessions and region caucuses. The training sessions were on different aspects of Section Management, Finances, Reporting, Electronic Services, etc. These sessions helped us in better understanding of IEEE organization and also in advancing our leadership skills. Some of the salient sessions were:

1. Section management orientation
2. Recognition for IEEE sections and Chapters
3. Membership Benefits
4. Financial Management
5. Section newsletter
6. Section access to Membership information
7. Meeting management
8. Motivating volunteers
9. Electronic services

Power point presentations of these training sessions have been made available at [www.ieee.org/sc](http://www.ieee.org/sc). We have brought the training material in the form of IEEE Section Officer Training CD, which can be imparted, to our Section executive in the near future.

Plenary Sessions included presentation on “International Space Station”, “Leadership” (by IEEE President) and “Innovation for Global Collaboration”.

We made a presentation on the concept of Sister Section. This was a joint presentation along with Washington Section. The executive committee of Washington Section and we two had a combined meeting. We exchanged comprehensive information about the programs and Section operation strategies and the procedures adopted by both the sections. All of us felt that the first face-to-face meeting with our Sister Section EXECOM members has given the impetus for close interaction and collaboration from now onwards. Everybody felt that whenever anybody from one of the Section is passing through the other Section, he should inform the other Section, so that they could organize suitable program or activity. They were quite enthusiastic about taking up a joint project with our Section which will be of common interest like some special training programs, etc.

With our first attempt to start the Sister Sections, others have taken the clue and a few more sister sections are on the cards, one of them is between Boston and Tokyo Sections.

There were Region caucuses where delegates developed recommendations that IEEE will address in order to best serve the needs of the members over the next few years. One of the main recommendations put forth by us from Region 10 was accepted and was given the highest priority. The recommendation was:

*IEEE should review the student membership dues structure taking into account regional economic differences to reverse the adverse effects in student membership growth and retention resulting from the recent steep dues increase.*

Overall it was a very rewarding experience for both of us delegates. We would like to express our thanks to the Section for providing us this opportunity.

By Dr R. Balasubramanian, Section Chair & Dr Ram Nath, Section Secretary



# KNOWLEDGE GRID

**PRAKASH.V.EKANDE**  
**CHAIRMAN**  
**EMS DELHI CHAPTER**

Well known philosopher Thomas Kuhn wrote in his thesis on ‘Structure of Scientific Revolution’ that scientific advancement is not revolutionary but is a series of peaceful interludes punctuated by intellectually violent revolutions. This he termed as Paradigm Shift. One of the greatest paradigm shift in history in which we are living is Internet Revolution, which is breath taking not only for its rich penetration almost in every aspect of human endeavour but incredible speed, access to information with which it is changing life with planet. In many ways, the internet represents intellectually violent revolution.

With internet and computer networking traditionally focus on supercomputers, high performance computing (HPC) applications have migrated to parallel computers that used off- the- shelf microprocessors and the parallel virtual machine opened the way to combine resources in LAN/WAN to low cost parallel processing. A number of projects successfully used WAN to high performance platform, using idle resources, denoted by participating owners to solve large problems. However, these metacomputing applications have in common that the problem can be decomposed in to a large number of subtasks that individual processors can solve independently without any synchronization or communication. Hence, they can easily make use of opportunistic resources i.e. resources that the owner may reclaim before the subtask is completed. Also, they can tolerate low performance or unreliable interconnection. Many applications however require more complex patterns or interaction to be supported by the underlying infrastructure. Grid computing, philosophy therefore emerged out aiming at providing the required services.

Grid computing has been vision to make computational power from different providers (PCs, Servers. HPS) available to global user community in much similar way as electric grid power from various sources. Whereas electrical power is standardized by only two parameters namely voltage and frequency computational power is much more complex, characterized by CPU type, memory, disk capacity, operating system, libraries available software packages etc. There are no generally accepted standards for deliver of computational power. Additionally, there are many reasons for owners of platform not to trust other user’s application. Lack of standards and security concerns led to a modified view of grid computing in the form of ‘virtual organization’. A group of individuals or institutions that share resources by means of individuals or institutions that sharing rules providers and users of resources state what is shared, who is allowed to use resources and under which conditions.

Number of grid computing technology projects around the world have been undertaken which includes Globus, Eurogrid, Datagrid, Crossgrid, Legion, OGSA etc. Up-to-date information on ongoing projects is discussed and published at meeting of Global Grid Forum.

The applications developed cover real-time Interaction simulation of vascular structure flow, flood prevention and protection, High Energy Physics - Analysis application. Weather forecast and air pollution The Design & Engineering management applications are being attempted to automotive industry. The scope of extend these technologies in design/engineering of complex multi-facet projects, complex products etc. is yet to be established. With changing scenario with e-commerce, e-governance and e-business the engineering community need to work on sharing and marketing untapped and vastly available intellectual property (IP) across the globe.

Intellectual property covers various issues related to asset creation, management and usages and marketing. Marketing of intellectual property requires a strict control of digital Rights Management in a present scenario of IT-Networking and Digital phase of knowledge development .preservation etc

In Indian context, Indian Institute of Technology, Madras is forming a marketing forum for Intellectual property with these objectives, which will go in long way.



# IEEE TENCON 2003

OCTOBER 14-17, 2003

HOTELTAJ RESIDENCY, BANGALORE, INDIA

[www.ieee.org/bangalore/tencon2003](http://www.ieee.org/bangalore/tencon2003)

IEEE Region 10 Technical Conference on Convergent Technologies For The Asia-Pacific

Sponsored by  
**IEEE Region 10**

Organized by  
**IEEE Bangalore Section**

Co-sponsored by  
**Indian Institute of Science**

## ABOUT BANGALORE

Bangalore is a bustling cosmopolitan city and the State Capital of Karnataka State. With a population of about 6 million, Bangalore is a major industrial, commercial center and the science city of India. It forms the nucleus of many scientific, technological and research activities.

It is also the Garden City of India and probably one of the loveliest cities in India with well laid out parks, gardens and long avenues of blossoming trees. Bangalore enjoys a strategic geographical location and is connected by air, rail and road to all the major cities in India.

## ABOUT TENCON 2003

In the past decade, there has been a synergy between developments in information technology and communication. The Internet and World Wide Web has made a significant impact on the society in particular all over the world, while influencing other fields including mobile and distributed computing, intelligent systems, collaborative work environments, cellular communication, multimedia applications and home entertainment. It has changed the way we work, think, spend our spare time our collaborative environment and the personal entertainment. The society has been benefited by way of faster, reliable and secure electronic communication, new technologies for imparting education and health care services for masses, disaster management, rural markets, distributed power generation with non-conventional and renewable energy sources and reliable power delivery and transportation. These technological changes have given rise to numerous challenges.

The TENCON 2003 at Bangalore will focus on different aspects of recent technological breakthroughs in related fields to evolve convergence in technologies with emphasis on the development of a knowledge society in Asia Pacific.

## INVITATION TO ATTEND

The Institute of Electrical and Electronics Engineers (IEEE) Region 10 is pleased to invite you to attend TENCON 2003. IEEE TENCON 2003 is the premier IEEE event of Region 10 with previous conferences being held in many cities of Asia-Pacific. It is not restricted to Region 10 IEEE members, but aimed to all those involved with electro technologies. Attendees are welcome from all parts of the world.

## SCOPE

Relevant topics of interest include, but are not limited to, the following:

- Signal, Speech and Image processing
- Natural language processing
- Data mining
- Mobile computing
- Embedded systems
- Multi-media systems
- Collaborative computing
- Computational science
- E-Commerce and E-Governance
- Bio-Informatics
- Internet technology & Computer networks
- Wireless networks
- Digital communication
- Radar & Satellite technology
- Microelectronics and VLSI
- Electrical power and Energy
- Robotics and CAD/CAM
- Bio-medical and Health-care applications
- Case Studies relevant to Asia-Pacific countries

## IMPORTANT DATES

Submission of papers	March 15, 2003,
Notification of acceptance	June 15, 2003
Camera-Ready paper due	August 1, 2003
Tutorial proposals due	May 1, 2003
Tutorial proposal acceptance	June, 1, 2003
Tutorial Date	October 14, 2003
Conference Date	October 15-17, 2003

## THE CONFERENCE CHAIRS

Prof. H.P. Khincha	General Chair
Dr. Sunil D. Sherlekar	General Co-Chair
Prof. Lawrence Jenkins	General Co-Chair
Dr. Sridhar Mitta	Finance Committee Chair
Prof. Y.N. Srikant	Technical Committee Chair
Dr. Kumar N. Sivarajan	Technical Committee Co-Chair
Prof. A. Chockalingam	Technical Committee Co-Chair
Prof. K. Rajagopal	International Co-ordination Chair
Prof. S.V. Sankaran	Organizing Committee Chair
Dr. Surendra Pal	Organizing Committee Co-Chair

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- Proceedings of the IEEE
- IEEE/OSA Journal of Lightwave Technology
- IEEE Electron Device Letters
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## **5<sup>th</sup> International Workshop on Distributed Computing (IWDC)**

**Dec 27- 30, 2003**

*Jointly Organized by:* Jadavpur University, Kolkata & IIM, Calcutta

*Co-Sponsored by:* IEEE India Council's Computer Society Chapter

### ***Call for Papers:***

IWDC is a forum for presenting the latest research on distributed/networked computing systems. The workshop will cover all the facets of distributed computing including theory, systems and applications. IWDC invites papers, embodying original research work, In MS Word, postscript or PDF format by e-mail to either of the program chairs.

### ***Important Deadlines:***

\* Manuscript Submission: June 15, 2003;

\* Notification of Acceptance: August 15, 2003;

\* Submission of Camera-Ready Copy : September 15, 2003

For detailed guidelines, please see the web-site <http://www.iimcal.ac.in/iwdc2003/CFP.htm>

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### ***Publicity Chairs:***

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Rajkumar Buiyya, Univ. of Melbourne, Australia, e-mail: [raj@cs.mu.oz.au](mailto:raj@cs.mu.oz.au).

## **6th International Conference on Information Technology - CIT 2003**

**December 22-25, 2003, Bhubaneswar, India**

***Sponsored By:*** Orissa Information Technology Society

***Co-sponsored By:*** IEEE India Council's Computer Society Chapter

***CALL FOR PAPERS :*** Authors are invited to submit original unpublished manuscripts that demonstrate current research in all areas of information technology.

For details, please visit <http://www.citconference.org>.

***IMPORTANT DATES :*** May 30, 2003 Conference Paper Due; May 30, 2003 Tutorial Proposal Due; July 30, 2003 Notification of Acceptance/Rejection; August 30, 2003 Camera-Ready Paper Due.

### ***Program Co-Chair :***

Sudeshna Sarkar, Dept. of Computer Science & Engg IIT,Kharagpur-721 302, India

email: [cit2003@cse.iitkgp.ernet.in](mailto:cit2003@cse.iitkgp.ernet.in) Tel: +91-3222-283494 Fax: +91-3222-278985

# COUNTRY REPORT - INDIA

By

**Dr. Ram Gopal Gupta**

**Chair-IEEE AES COM LEO SOCIETY CHAPTER INDIA and  
Vice President & Chair Communication Chapter, IEEE DELHI SECTION**

India, the world's largest democracy with world's second highest population and 7th largest area is also the 4th largest economy in terms of purchasing power Parity. One of India's important assets is its vast reservoir of skilled manpower. The far reaching and sweeping economic reforms undertaken since 1991 has unleashed the immense growth potential of the Indian economy. A new spirit of economic freedom is now steering the country. A series of "Second Generation Reforms", aimed at further deregulation and stimulating foreign investment has moved India firmly into the front ranks of the growth international economies.

India's 42 million line telephone network, including mobile, is the 5th largest in the world and second largest among emerging economies with a wide range of services - basic, cellular, internet, paging, v-sat etc. Given the low telephone penetration rate which is about 4 per hundred population, India offers vast scope for growth. It is, therefore, not surprising that India has one of the fastest growing telecommunication systems in the world with an average annual growth of about 22% for basic telephone services and over 100% for cellular and internet services. Telephone lines added to the basic services network over the last 5 years have been one and a half times that added over the preceding 50 years!.

Indian telecommunications sector has undergone a major process of transformation through significant policy reforms, particularly beginning of reforms in the 1990s that led to gradual ushering in competition for greater consumer welfare, particularly in terms of lowering of tariffs and improvement in quality of service. The phase of reform commenced with the general liberalization of the economy in the early 1990s. Telecom equipment manufacturing was delicensed in 1991 and value-added services were declared open to the private sector in 1992 following which radio paging, cellular mobile and other value added services were opened gradually to the private sector.

The most important landmark in telecom reforms came with the New Telecom Policy 1999 which can be termed as the new, or third generation of reforms. The NTP-99 envisages a tele-density of 7 by 2005 and 15 by 2010. To achieve this, approximately 75 million telephone connections would be required to be provided by 2005 and 175 million telephone connections by 2010. At current price, this translates into US\$37 billion by 2005 and US\$69 billion by 2010. With the Software Industry booming, and internet/mobile phone market exploding, Telecommunication in India is gaining due importance. Moreover, Rural Telephony, Maintenance of already existing network and Products of Strategic importance offer huge business opportunities.

NTP99 is not just a policy document. It reflects a new philosophy, a new vision, a new direction and a new commitment. The government has undertaken its implementation with utmost earnestness, in letter and spirit.

## **The Ninth Five Year Plan 1997-2002 - Progress Report**

During the Ninth Plan period, the number of DELs has already increased by more than 2.5 times; from 14.5 million at the beginning of the Plan the number of DELs is expected to reach 40.53 million by the end of the Plan. From 0.34 million at the beginning of the Plan, cellular mobile phones too have crossed the 5.5 million mark. Tele-density has increased from 1.57 as on 31.3.1997, to 3.58 on 31.3.2001, and is expected to reach 4.5 by the end of the Plan.

Rural tele-density has also increased from 0.34% in march, 1997 to 0.93% in march 2001, and is expected to cross 1% by the end of the Plan. Internet connections have reached 3 million by the end of March, 2001. The total estimated investment by the public and private sector operators during the first four years of the Ninth Plan (1997-2002) was US\$ 12470 Million. The average annual investment by the public sector operators (viz. BSNL and MTNL) during the first four years of the Ninth Plan has been about US\$ 2590 Million per annum, where as the investment by the private sector during the same period has been about US\$ 527 Million per annum.

### **The Tenth Five Year Plan 2002-2007 - Projections**

Keeping in view the present trend of growth of the telecom network, the tele-densities to be achieved by the end of the Tenth Plan i.e., March 31, 2007 would be 11.5 per 100 population at the national level; 3 per 100 for the rural areas and 30.74 per 100 for the urban areas. Based on this, the annual compound growth rate of telephones (Fixed + Cellular) is required to be 22.62% - consisting of 17.48% for fixed lines and 46% for cellular lines. During the Plan, a total of 81.7 million phones, including 31.55 million cellular phones are to be provided. Of these, 14.72 million will be in rural areas. To achieve these targets, a total investment of US\$ 32135 Million has been estimated; of this investment, an amount of US\$ 8832 Million will be required for the rural areas. The public sector is expected to invest about US\$ 22876 Million , and the private sector US\$ 9258 Million . In addition, in the manufacturing industry, an investment of about US\$ 1200 Million is also required during the Plan to have state of the art facilities.

## **Communications Society Chapter Achievement Award for Delhi Section**

(Letter of Award reproduced below)

Dear Ram

Congratulations! On behalf of Trevor Clarkson, our Vice President Membership Development, Bhaskar Sengupta, Director Membership Programs Development, and the Regional Directors, it is my pleasure to announce that your chapter has been selected a winner of this year's Communications Society Chapter Achievement Award.

As you know, procedures for awarding the ComSoc Chapter Achievement Award have changed, and from now on up to 16 qualifying chapters per year may be recognized through certificates (acknowledging outstanding leadership) and \$500 honorariums.

Shortly we will arrange to make your certificate and for IEEE to process the \$500.

By the way, if you plan to attend Globecom in San Francisco, be sure to let us know. We would be delighted to recognize your chapter at the Awards Luncheon even though travel and living expenses are no longer part of the award.

Once again, "bravo" to you on this well-earned recognition! Your continued efforts in promoting your chapter's activities are highly regarded by the Society.

Sincerely -

Carole M. Swaim  
Sr. Administrator, Executive & Volunteer Services  
IEEE Communications Society  
305 East 47 Street, NY NY 10017  
(T) 212-705-8970, (F) 212-705-8999



*BEACON Congratulates Dr. Gupta and the Communication Society Chapter on this achievement and recognition by IEEE!*

# IEEE DELHI SECTION EXECUTIVE COMMITTEE : 2003

e-mail: [ieeedelhi@ieee.org](mailto:ieeedelhi@ieee.org)

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## FROM THE EDITOR



In this highly competitive world, the ultimate individual's capability to adapt him to the continuously changing environment that brings success. To build such capability, the professional bodies provide the forum of continuous renewal and learning of the knowledge. In this regard IEEE, as you all are well aware, is in the forefront. The BEACON house-publication of IEEE Delhi Section is one of such media, which brings out useful information and communication to each individual member. Student Members are more valued in respect of contribution and functioning in future, therefore we have kept focus to their interests. We always look forward for active participation & support from Student Members/Counselors.

I am glad to publish the June 2003 issue of BEACON to our esteemed members and readers.

The earlier issue was focused on SCADA & Transmission System. This issue is oriented on Computer & Communication Technology. It is our attempt to dedicate each issue to different topics.

I hope that our members and readers will find this issue interesting. We solicit active participation in continued learning and renewal of technology.

With regards,

**P.V. EKANDE**  
**Chairman**

**Public Relation & Publication standing Committee**

### EDITORIAL COMMITTEE

1. Shri PV Ekande *Editor*
2. Shri PK Srivastava
3. Dr. Ram Nath
4. Shri Daman D. Sood

### TECHNICAL, EDUCATIONAL & PROFESSIONAL ACTIVITIES IN 2003 (UPTO MAY 2003)

#### **31st Jan. 2003**

Talk on "Energy for Poor, the Global Village Energy Partnership (GVEP)" by Mr. Richard (Dick) P. J Sr. Engineering Adviser, DFID, UK at IE(I) Delhi State Center, New Delhi (along with PES-IAS Chapter Delhi International Center and IEI DSC)

#### **14th Feb. 2003**

Talk on "Digital Rights Management" by Dr. K. Subramanian, NIC, New Delhi at India International New Delhi (along with Computer Society Chapter)

#### **6th March 2003**

Talk on "Delhi Metro - Metro Technology, Challenges in Indian Context" by Mr. Satish Kumar, DMRC, Delhi at India International Center, New Delhi (along with Engineering Management Society Chapter)

#### **28th March 2003**

Talk on "Information Technology in Banking" by Dr. A.K. Chawla, TCS, Gurgaon at India Internal Center, New Delhi (along with Computer Society Chapter)

#### **21 May 2003**

Talk on "Laser and Optics technology in manufacturing" by Dr. Y.P. Kathuria of Ritsumekian U niversity, Japan in Electrical Engg. Deptt. IIT Hauz Khas, Delhi