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Features

CHAIRMAN'S MESSAGE

Dear fellow members,

The IEEE Student branch at VESIT, Mumbai has once again won the first position in the Region 10 Web site contest. Congrats VESIT team for this achievement year after year.

01 May was the due date for Student branches to submit their Annual reports for academic year 2002. Hope all branches have submitted. Those branches who are yet to do so, please do so on priority. For every student member on the rolls as on 31 Dec 2002, the student branch will receive a rebate of US $ 1.1. Those student branches who submit their Annual Plan by 01 Nov 2003 will receive $50 as additional rebate. The rebate cheque will be sent directly to the Student Branch Counselor. Hence it's important that the Student Branches report in time as well as keep the IEEE HQ informed of the current officers and counselors. I earnestly request all Section Chairs/Section SACs/Student Branch Counselors to take note of this and motivate the student branches to do the needful. So far the reporting by Student branches have been very dismal. Details on student branch reporting can be located at www.ieee.org/portal/studentservices/ or one can send a mail to hkalyan@ieee.org

It may be noted that the Student Branches can send their reports as scanned copies by e-mail rather than by courier or snail mail. This should help both in terms of time and money.

Prof. Vijay Bhargava of Univ of Victoria, BC, Canada is once again an IEEE President Elect candidate nominated by the IEEE Board. We, the IEEE members in India, should exercise our choice of the best candidate in time so that the Ballots reach US in time. The ballots can be mailed from India without affixing any postage stamp. Please watch your IEEE mails and do the needful.

IEEE-USA, a body of the US based IEEE members is concerned about the rate of unemployment in US. Hence they are taking up the matter with the US Government. This may result in different perceptions by different agencies/bodies. Each one of us need to understand the concerns in the right perspective and react if necessary.

With best regards,

R. MURALIDHARAN

Mumbai
Chairman

1 June '03   IEEE India Council

r.muralidharan@ieee.org

"The wise and moral man shines like a fire on a hilltop, making money like a bee who does not hurt the flower"

- The Pali Canon

This issue is sponsored by

IEEE BANGALORE SECTION

EDITOR'S DESK

"Workers are *paid to work*. Not walk."

Osama Suzuki, Chairman, Suzuki Motor Corp.

In Japan, there is acute shortage of space, in all spheres like industry, business or dwelling. A team of foreigners visiting a Japanese factory attributed its crammed look to this space constraint. But during the subsequent interactions, they were surprised to know that it was not really lack of space but a planned approach to maintain a *'compact workplace'*. According to Japanese, saving few seconds each time a repetitive work is done by a worker will add up to so many man-hours, which can help to have extra production. The words of Suzuki Chairman show how seriously Japanese value this concept. If one has to spend few seconds to walk up to a shelf to pick up components and that too several times in a day, precious time gets wasted in the process. Hence, provision is made in the overalls of workmen to store small components or storage is arranged very near to the work place to save time.

Let us also look at a similar situation in communication front. It was the fax era, much before the arrival of e-mail. A large business group with operations all over India was using fax as the medium of communication among its 100s of branches. Every day, thousands of fax messages were being exchanged among the staff in different locations, each message ending with 'Best regards'. The CEO was worried about the mounting telephone bill and was looking for ways to reduce it. Acting on a brain wave, he asked the man in charge of communications to calculate the STD cost for sending the words 'Best regards' with every message. It was an astounding multi lakh figure! He immediately ordered that when ever business messages are exchanged among the employees in the organization, such pleasantries are not necessary and its cost could very well be saved.

In this era of cost cutting exercises, many such opportunities may be existing in organizations. The skill lies in identifying them and initiating steps to address them efficiently.

N.T.NAIR

Trivandrum   Editor

1 June '03   e-mail: del@vsnl.com

IEEE NEWS & EVENTS

Delhi Section Bags Awards

Carole M. Swaim, Sr. Administrator, Executive & Volunteer Services
IEEE Communications Society, New York has announced on behalf of Trevor Clarkson, Vice President-Membership
Development, Bhaskar Sengupta, Director- Membership Programs Development, and the Regional Directors, that
Delhi chapter has been selected a winner of this year's Communications
Society Chapter Achievement Award.

The 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.

According to yet another communication received from Dr George G. Karady, Salt River Chair Professor, Department of
Electrical Engg.,Arizona State University and Award Committee Chair, Delhi Section Jt. Chapter PE31/IA34 has been awarded
the PES Outstanding Chapter Award 2002 under Large Chapter category.

Large chapter

Winner:

DELHI SECTION JT. CHAPTER, PE31/IA34

Chapter Chair :

Dr. S. Mukhopadhyay, New Delhi

PES Chapter Representative, Region 10: **Subrata Mukhopadhyay**

Congratulations, fellow IEEE members of Delhi Section !

State Electricity Boards at Cross-roads

Seminar by IEEE-PES
Madras Chapter-A Report

A Seminar was held on the topic 'State Electricity Boards at Cross-roads' by IEEE-PES Madras Chapter 22nd March '03. Mr. Janakiraman, former Chief Engineer/T.N.E.B., in his over-view of the subject "SEBs at cross-roads " dealt with briefings from Rajyadhaksha Report about the aim and purpose of SEBs and where they stand now. Mr.M.G.Devasahayam, former Chairman, Haryana StateElecy. Board, brought out the difference between restructuring and reforms. He explained the objectives of restructuring which is really an unbundling exercise. Reform is quite different in the sense that improvement in functioning in all activities is aimed at. Mr. Nellikuppam V.Krishnamurthy, ExMLA&ExMP, dealt with the impact of politics in EBs and other generation utilities. He cited the examples of Dhabol and Neiveli Lignite Corporation. He pointed out the increased cost of installed power in India as compared with UK etc., He highlighted the need for reviewing the Power Purchase Agreements and reducing the cost of power purchased. Mr. M.Selvarasu, Counsellor-CII,Energy Audit, presented several case-studies where reduction in energy consumption is possible. He laid special emphasis on the need to have pumps of high efficiency rather than procuring them based on mere specifications. Mr. B.Chandrasekaran, National Sales Manager, Grundfos, highlighted the importance of considering hidden costs, rather than the prima-facie purchase cost. He pointed out that energy cost may be as high as 85 % of total cost. Hence, this must be the criterion in vendor-rating. He advocated Solar pumps as an ultimate energy-saving device. Mr. Bharath Jairaj, Legal Co-ordinator, Citizens, Consumer&Civic Action Group, dealt with the survey done by the Consumer Action Group on Consumer-satisfaction in TNEB. He highlighted as to how a large number of consumers are oblivious to their rights and needs. Very few take the trouble of complaining, as they do not know where to complain to. He described the improvements lately viz., SERC's directives to TNEB and proposed call centres. Mr. A.R.Sadagopan, former C.E./T.N.E.B, described about the functioning of agricultural pump sets in TNEB. He highlighted that what is required by the agriculturalists is water(interconnecting of rivers), and not power itself. He gave the statistics relevant to the topic of Energy Management Alternatives in Agri sector. Mr. Hanumantha Rao,Consultant, highlighted the deficit caused due to cost of sale being 110 paise less than the generation cost. He indicated the huge shortage between the target and achievement in capacity addition. He explained the inadequacy in the present structure of SEBs in numerous aspects and the reform actions taken so far like constitution of SERCs. He told about the strengths of the Indian power sector. Details were given on raising of capital and criteria for regulatory plans. Mr. G.V.Rao,Chairman, IEEE-Power Engg. Society,Madras Chapter, wanted an Act to be passed for energy-saving in all spheres. He said 40 % saving is possible in agricultural pump sets. There are devices which give 40 % energy-saving in ACs. He highlighted the huge energy-saving possible in Motors. Mr. V. Shanmugavel, Consultant, dealt with the cost reduction in SEBs. He said correct costing system is not available in SEBs. Several requirements are needed like performance factors / methods, productivity, standardization, R & D, Energy audit/Management. He concluded that agri power-needs can be substantially reduced, if not eliminated altogether, if water is made available to farmers by mega projects, like interlinking of rivers. In addition to the 10 papers presented above, 8 more papers were received from M/s. M.Anver, M.P. Sukumaran Nair, Sujatha Natraj, P.Abirami/R.Thirumalai, S.Senthil Kumar/V.Palanisamy, N.Kumarappan/M.R.Mohan, T.R.Ekambaram & R.Nedungkeeran. Mr.G.V.Rao, Chairman, IEEE-PES Madras Chapter and Mr.P.Janakiraman, introduced the Chiefguests. Mr.K.V.Rupchand gave the Summary of the Technical presentations. Mr.T.Senthilnayagam, Hon. Secy., IEI/TSC was the organizing secretary of the Seminar. Mr. V.Shanmugavel, co-convener, proposed the vote of thanks.

Reported by:

P.Suresh Chander Pal,

Convener, Seminar, Vice-Chairman, IEEE-PES Madras Chapter.

Technology *in brief*

Smart Card Security Under Threat

Smart Cards, those credit card and related cards that contain a microprocessor, memory, encryption software, and — your data, have obviously been designed to be secure. The presumption is that a stolen card without your (brain-resident) PIN code won't give up your data.

As per a May 14 News.com article (http://www.globetechnology.com/servlet/story / RTGAM. 20030514. gtflipmay14/BNStory/Technology/), a
Princeton college student has found a way to open a Smart Card's can of
info-worms with nothing more sophisticated than a light bulb!

In this case, Sudhakar Govindavajhala found that by heating the card with the lamp he could accelerate the chance of spontaneously causing a random bit in the card's memory to "flip" from a 1 to 0, or visa versa, which broke the security model of the Smart Card. Having first loaded the unsecured portion of the card's memory with his special "attack program," and at least 60% of the rest of the unsecured memory with the
'address' of his attack program, there was a 70% chance that his attack program would execute when his heat-induced "bit-flip" occurred, giving him unrestricted access to the user data on the card. And this "exploit" will only get worse in future Smart Card chips that are built of smaller and lower-power devices, since the threshold for an unintentional bit-flip will be lower.

According to Principal Analyst Fred Cohen with The Boston Group, "...people who created virtual machines didn't take into account this possible attack method."

'Casual Capture' of Photos

Hewlett-Packard is working on a new consumer photography system that could "casually" capture terabytes of images from a person's daily life and store them in data centers, where they could later be retrieved for conventional printing.

The "casual capture" project is one of the research projects underway at HP's labs in Bristol, England. Casual capture is HP's term for a method of taking snapshots that involves a minimum of effort on the part of the photographer. Ideally, the consumer could don an always-on, wearable camera, visit an event such as a party, and afterwards find that the camera had automatically selected and cropped the most memorable images. Researchers admit that this is probably an impossible goal, but are working on a more limited, and possibly more realistic, version of the technology. But for now, the method involves a device that would continuously record images; and when something memorable happens, the user would make an indication of some kind, by saying a word or pressing a button. The camera technology would then zoom in and, using complex pattern-recognition technology, select what appeared to be the best images, and appropriately adjust and crop them.

The technique is designed to push the limits of how ordinary people take snapshots. While it is not designed to replace conventionally composed photography, it could vastly increase the number of photographs people take. Researchers said they expect casual capture to increase demand for low-cost storage, among other effects.

Ideally, the user would not have to be aware that the camera is in operation. There would be no viewfinder; the device, mounted inside the bridge of a pair of glasses or elsewhere on the head, instead would be designed to capture roughly the user's field of vision.

Capturing the images is less of a problem than automatically selecting and formatting them, however. One algorithm, for example, attempts to locate the center of interest in a shot by identifying similar visual elements that are grouped together, then zooms in on that part of the picture.

The imaging software would also recognize when a sequence of shots could best be presented as a video clip, and would transform a slow movement of the head into a panoramic image, by stitching a sequence of related shots together.

The research hardware uses a small mounted camera attached by a cable to a bulky storage device, but researchers have also demonstrated a camera mounted inside a pair of glasses. The hardware currently captures 5 frames per second into a buffer of 25 frames, though researchers said this could easily be increased.

Bussiness Buzz Words

· Peter Principle

This buzzword was coined by the late Prof. Laurence Peter, a Canada-born, US academic and was first introduced by him in a humoristic book (of the same title) describing the pitfalls of bureaucratic organization. The original principle states that *in a hierarchically structured administration, people tend to be promoted up to their "level of incompetence"*. The principle is based on the observation that in such an organization, new employees typically start in the lower ranks, but when they prove to be competent in the task to which they are assigned, they get promoted to a higher rank. This process of climbing up the hierarchical ladder can go on indefinitely, until the employee reaches a position where he or she is no longer competent. At that

moment the process typically stops, since the established rules of bureaucracies make that it is very difficult to "demote" someone to a lower rank, even if that person would be much better fitted and more happy in that lower position. The net result is that most of the higher levels of a bureaucracy will be filled by incompetent people, who got there because they were quite good at doing a different (and usually, but not always, easier) task than the one they are expected to do.

In simple terms, it refers to the inevitable arrival of an employee at a career level too demanding for his or her talents. Career momentum often propels the strong performers into more responsible jobs beyond their abilities. Result: Disaster for the executive, a hiccup for the organisation.

· NIH syndrome

'Not Invented Here' syndrome refers to the rejection of an idea on the grounds that it can not possibly be of value if it comes from outside. This is one of the fundamental blockages to innovation in large, complacent companies.

· Eyebrow Management

An arm's length management style by which a top executive can stop a course of action with the merest hint of disapproval – in effect by raising his or her eyebrows. Beware of this individual when aroused.

· Win/Win situation

A negotiating stance in which one party attempts to find a solution that both parties can feel good about. In other words, in Win/Win situation, there is no loser, as both parties will be equally benefited.

Library Scan

"Business 2010"

'*Five forces that will reshape business-And how to make them work for you*'
Book by: **Fred Harmon**
Published by: **Jaico Publishing House, Mumbai in arrangement with The Kiplinger Washington Editors Inc. Washington, USA**

Author Fred Harmon shows how worldwide expansion of technology, freedom, education and globalization, as well as some   profound changes in demographics, will affect large and small businesses and their owners, managers and employees in the years to come. Many of the challenges and opportunities that business will face in 2010 exist now, but most will intensify over the coming decade.

According to the author, the book will help you to develop a comprehensive strategy for:

Understanding the key forces of change better than your competition and

Successfully aligning the key components of your business – market, organization, products & services, capital and people - with those forces.

"The 2,000 percent Solution"

Book by: **Donald Mitchell, Carol Coles and Robert Metz**
Published by: **American Management Association, New York, USA.**

Organisations, like people, are creatures of habit. They tend to approach problems and practices in predictable ways.

This book argues that such ingrained habits, which often masquerade as efficient procedures, actually obstruct growth. And while it is no small task to unblock "stalled" thinking (we resist at every turn), the payoff is immense.

The book introduces "stall busting," a process that shows how to recognize typical stalls and overcome them. The book also helps to understand why companies habitually "think small" in order to feel comfortable and in control.

Through unorthodox examples ranging from the *Titanic* to *Leonardo da Vinci*'s bicycle, **The 2,000 percent Solution** redirects our knee-jerk reactions, or stalls, and gets the readers on the road to sustainable change.

News - Scan

Is INTERNET the Most Complex ?

According   to   recent   surveys   and   projections   by   Cyber   Atlas   (http://   cyberatlas.   internet. com/big_picture/geographics/article/0,, 5911_151151, 00.html), the averaged results of two different studies put the 2002 worldwide Internet population at 618 million users, which is projected to rise to 827 million users in 2004 (up from 27.5 million users in 1994 - http://www.mids.org/pressbig.html).

According to the CIA World Fact Book, there are now approximately 12,000 ISPs (Internet Service Providers) providing access to the Internet, worldwide.

The Internet is clearly a large and complex network, demonstrating impressive growth. Yet this huge network, composed of 200-300 million computers, pales beside some REALLY complex networks that each one of us is intimately familiar with — "us!"

Alan Kay ("The best way to predict the future is to invent it," of Smalltalk, windowed-interface, desktop publishing, Ethernet, and laser printer fame, who was a co-founder of Xerox PARC and held leading technical positions at Apple, Disney, and now HP Labs - http://unrev.stanford.edu/presenters/alan_kay/alan_kay.html) has more than enough credentials to be called a visionary. And perhaps more importantly, he has the habit of bringing his visions to life.

During a keynote speech he delivered to the recent "Congress On the Future of Engineering Software" conference (http://www.cofes.com/news/?20030122), Alan described how we each are made up of one BILLION nodes (commonly thought of as cells) - in just the first joint of our thumb!

Add up all the cells in the rest of our bodies and we're each a network of 100 TRILLION separate nodes, all working together to make us what we are.

Now THAT'S complexity. And self-assembly. And self-management. And self-repair.

And it all works.

Once we figure out how we manage our own (very) internal networks, we'll be much farther along towards learning how to create and manage the really large networks of "connected everythings" that a growing number of people envision. (For an example of how this is beginning, check out the newest in vineyard data collection at http://www.globeandmail.com/servlet/story/ RTGAM.20030521.wxebvine/BNStory/Technology/ ,.)

This is a good example of the power and the potential of NBIC (the Convergence of Nanotechnology, Biology & medicine, Information sciences, and Cognitive sciences), and we're very lucky in this regard — we are eager students, and Nature is a willing teacher.

"Convergence" is a beautiful thing.

Administrivia:
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