CHALLENGES
PABX
RAX
MAX
TAX

Dear Reader,

GIVE ME ONE CHANCE . . . . .

. . TO CHOOSE MY NAME

WON'T YOU SEND YOUR SUGGESTIONS TO

YET TO BE NAMED
ROOM No. 918
AKBAR HOTEL
CHANAKYAPURI
NEW DELHI-110 021

P.S. — A BAR OF CHOCOLATE FOR YOU IN ADVANCE

Dear Reader,

Opinion is divided on, as to what a House Journal should be like and the way it should be 'run'. As one is wont to say in C-DOT it depends on the implementation.

From the year or so that one has spent in C-DOT one feels that this is not a place where people want to see ribbon cutting politicians on their house mag or excerpts of somebody's speech on some occasion.

In its current version, this C-DOT house journal (anonymous as yet), is a motley collection of articles both technical and non-technical. It is highly informal (like most of us). In fact, there is no editorial board for 'the mag'. Instead, a group of contributors take care of the mag, from concept to commissioning. Vivek, Savvy, Nishant, Hari, Vandna, Abhay, Lalit, Shankarnarayan and two articles from CDOTIQUE Bangalore, August '84 assumed the role of contributors this time.

The next time, which will be in the next quarter of '86, others from within are expected to assume torch bearing roles.

In terms of contributors, anything is welcome, if it is hand copiable. While there is no linguistic restriction, there certainly is, a language restriction. The target audience to this literary effort is C-DOT in its 3 locations viz. 8th floor, 9th floor and Bangalore. While there are no censors to the mag, it is worthwhile considering that you are open to defamation charges (refer appropriate section of the Indian Constitution).

We close by saying that this mag by the people, for the people and (sometimes) of the people shall not perish from the earth (it may just get a bit hard to find).

PIX

Front Cover: Kavita Dar

Inside Front Cover:

  Feature Review by M.K. Shedha

  Advertisement by T.L. Savithri Devi

Back Cover: Nishant Dani

Others: Nishant Dani

Limmericks by Savithri, Nishant, Vandna

Published by Vandna Kalra, on behalf of C-DOT

MY DEBUT AT C-DOT

Well here I was a fresh graduate (with brilliant ideas)... going out for my first job in life. C-DOT being a R & D type of organisation, it immediately conjured up thoughts one usually has... absent minded people who were in their own world talking of bits and bytes and probably having VLSI chips for breakfast. I expected to find atleast one Prof. CALCULUS around. A long search for No. 71, Millers Road (thanx to the excellent road numbering system) I landed at the hallowed premises of C-DOT. (The autorickshaw man relieved me of an extra fiver in the process).

I remember my first few words distinctly for they were, to put it mildly, a disaster. I enquired "Where is the office of C-DOT?" The young lady at the reception gave me a quizzical look and reminded me that I was in it. I later learnt it was Geeta (Or is it Geetha?)

To cut it short, I then met Mr. Chandrasekhar (T.) (with whom I also shook hands) who asked me to meet people and get familiar in general. After an unsuccessful attempt to draw attention, the engineer in me woke up and I entered the following subroutine:

1 Ø TAP THE PERSON ON (HIS) SHOULDER.
2 Ø OUTPUT GRIN ON MY FACE.
3 Ø EXTEND RIGHT HAND.
4 Ø SPEAK "HELLO I AM SATISH FROM IIT-B AND I HAVE JOINED YOU ALL TODAY".
5 Ø INPUT TAPPED PERSON NAME AND STORE IN MEMORY.
6 Ø EXCHANGE DATA (IN ASCII) ON C-DOT BANGALORE AND LIFE IN GENERAL.
7 Ø SPEAK "NICE MEETING YOU".
8 Ø GO TO NEXT PERSON.

(It has no end, for I still find a few new faces). My memory being rather short lived (it being a d-RAM, it requires a periodic refresh), on not remembering a name I used to try a XXX SWAMY or a XXX SRINIVASAN on every third person I met. (Excepting of course, the opposite sex). The few incidents that occured and that are still in memory, are given below. The first exchange that occured when I met Mr. Srinivasan was, he reminded me that he wasn't knighted. The rest was as usual.

Mr. Mageswaran (who tends to be I-D) emphasized the importance of being relevant, concise and maintaining SNR=1 if not greater. Ripu (the demon) started (and ended) with a burst of laughter and so did I. I being very studious and all that (atleast I had to pretend to be one) went dutifully to the library. I had barely lifted a book when a young lady (later identified as Parimala) sternly told me to make entries into the register whenever I took a book. Being a freshie, I dutifully nodded my head (and also made an entry). A chubby cheeked boyish looking guy named Kabeer vigorously pumped my hands and exchanged a few pleasantries. He however (thank God!) did not recite any dohas. Ashok over a space of 'N' Charminars gave me some fundas on the PABX. A bracer was called for and I ventured towards the canteen. (I ate biscuits as biscuits only, how else does one eat them George?)

It was around 5.30 p.m. by then, and I decided to call it a day. May God be blessed for the people at C-DOT were certainly a friendly and helpful lot, and I had come to the right place after all!

In Brief . . . .

Europe's first public international video-conferencing service, enabling groups of people to see and speak to each other face-to-face by television, is now available between the United Kingdom and the Federal Republic of Germany.

British Telecom

Americans are world telephone champions

In the past ten years the telephone station density world-wide has increased from 9 to 12 stations per 100 inhabitants. The share in the developing countries over the same period, on the other hand, shows only an increase from 0.2 to 0.3 telephones per 100 subscribers.

Telecom Journal
Dec. 85

C-DOT Antidote to Telecom Woes

The Centre for Development of Telematics (C-DOT) has developed a telecommunications network which, according to officials, is "an exemplar of appropriate technology" in the country.

A lot of interest has been generated over the project. About 70 parties have come forward with offers to manufacture it which, says Mahajan, "is very encouraging" C-DOT will provide the technical know-how to the manufacturers whose main target will be assembly operations. The prospective manufacturers can be distinguished into four groups-large public sector undertakings (BHEL, Instrumentation Ltd.), State industrial development corporations (Meltron, Hartron, PSEIDC): large public houses (Tata, DCM); and small scale industrialist or hi-tech entrepreneurs with the requisite R&D and technical competence.

Dataquest
November, 1985

NAME DROPPING

"Where have you last seen a jean clad nonchalant fellow with a glassy eyed look, unkempt hair, slippers on his feet? Has a characteristic gait, a weird sense of humour, and above all has brains". A classified advertisement for a missing C-DOT Software Engineer? Not quite.

What does it mean to be a C-DOT Software Engineer — Like Really?

It could mean sneaking into office through the seventh floor because you have no I-Card to show to the dour doorman. It could mean late hours trying to move the cursor of a VAX 730 B terminal through sheer will power. An occasional mid morning feast in 828. Loads of paperwork. After all hasn't it been said that when the weight of the paperwork equals the weight of the Exchange, the Exchange will work. It could mean spending 3 overnights in a row in office, because you will soon be on the firing line.

Last but not the least, if you belong to the fairer sex, it could mean realising the Marilyn Monroe dream — of being a woman in a man's world.

The Software Group is large — at least in Delhi. In Bangalore it is small but not insignificant.

We shall attempt here to present some characters from the five original Software Groups in Delhi. And present them to you, like they are — colourful livewires. If this gives an impetus to the other groups to perform a similar exercise, all the better.

To begin at the beginning, the way a Software Engineer likes it best, we follow the principle of modularity and strictly alphabetical hierarchy.
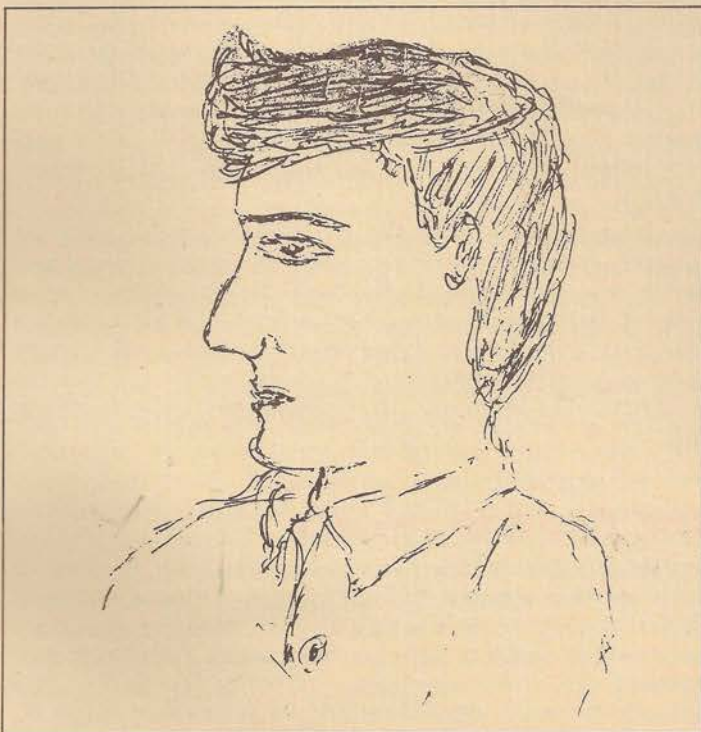
VIBHU the CALL MANAGER

Administration Software Subsystem

Does that ring a bell? Puns apart, even the venerable Oxford English Dictionary would stall in an attempt to include the various components lying under the umbrella called Administration.

The list begins (alphabetically of course) with Billing Administration, and works its way through Man-Machine Communication and Network Management to Verification of Recent Changes. Volume leavened with variety, what? If it is the IOP, it must be Admin. The Unix based I/O Processor will resound with the cries of the CRP's (Command Recognition Process), tremble under the gaze of their mighty CEP's (Command Execution Process), and marvel at the longevity of their eternal OOD (Output Outside Dialogue Process).

If in our exuberance we have got the process names wrong, won't you correct us Mr. A G Dixit? By the way, if you haven't met him before, Dixit is the numero uno of the Admin. Group. Immaculately dressed, and precise to his fingertips, Dixit has a great appetite for Academia. With a Master's degree in Communications from Roorkee University, and another in Computer Science from IIT, Delhi, he is now a veritable don. Was it Confucious who said that true learning shows? No wonder, Dixit remembers the names of all the Head's of the Electronics Engineering departments of all the Universities he has attended! And no wonder, he is a strong votary of the Uncertainty Principle.

The French Impressionist Edouard Manet is said to have drawn inspiration from the classic Maja series of the Spanish painter Goya. Be that as it may be, our own Maya Viswanathan could be a good source of inspiration for our next generation (edition?) of cartoonists and lyricists. Any takers? For the record, let it be said that Maya has an MSc from Madras Christian College, has attended a conference on Real Time Software in California, and works on the SSIP process (or is it ISSP?)

Hasn't it been said before that our C-DOT is a world within itself? And where can a world be without its sceptics, cynics and Diogenes'. To be fair to Karunanithi, it must be said that his document on the Calendar Process, was the first eminently readable work that was churned out in those dark days of mid September when harassed Review Committees tore their hair in anguish. Needless to say, the standards of Review Documents soon rose and stabilised. A couple of cynics is all it takes to make a great storm in a tea cup. Right Karun?

Then, there is the worthy Murthy. A clear thinker, a hard worker, and a quiet personality, not necessarily in that order. Don't get fooled by his appearance of timelessness, he is the C-DOT authority on Recent Changes. Murthy spends most of his time in C-DOT or in Karnataka Sangha (for which he has developed a tremendous fascination). It is rumoured that he does go home on weekends. Thanks to his efforts, 925 is now the ideal place for a midnight snack.

CALL PROCESSING FEATURE REVIEW

"The Call Processing Subsystem is specifically responsible for controlling customer level interfaces, call control

and feature processing. It is provided a convenient operational environment by the other systems, with the operational details in each of these, invisible to the Call Processing programs". Got it?

For those who are slow on the rebound, it is like this. If you see anyone on the 9th floor who

a) has a flair for Specification Description Language (SDL)
b) has an obsession for Real Time
c) often says — "Of course, I am transparent to that", and
d) trembles when the word "Jalan Function" is dropped
It is a 100 to 1 he belongs to CP.

If you haven't met that intense person — a man of few words and a flair for doodling, you haven't met M.K. Shedha.

His stern manner is belied by his sporty reputation. You can catch him on weekends on the cricket ground, and on weekdays attending Feature Reviews. He once lead his group through an all night session on Messages. By dawn, a vintage Message Dictionary was conceived. The world hasn't been the same, ever since.
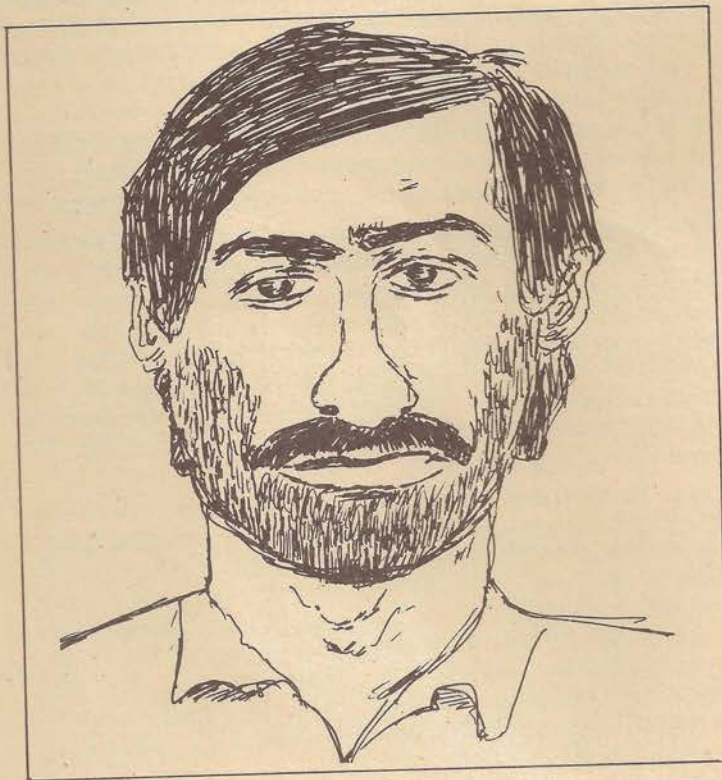
NAGI before he joined C-DOT

If you are an Electrical Engineer, you can't forget Kirchoff's Voltage Law. And if you have had anything to do with C-DOT's Software Group, you can't forget KVL Nagendra. They have a saying that if you need an opinion, you need NAGI's OPINION. He designed a PABX for HIL where he worked for 3 years, and in his spare time digested Bell System Technical Journals in IIT Delhi. A veritable cornucopia of facts ranging from the Abacus to Zilog.

If on a cheerless Monday morning, you can bump into Chandru — there isn't a better way to start your day. Chandrasekhar Krishnamurthy to give him his due, is as chirpy as they come.
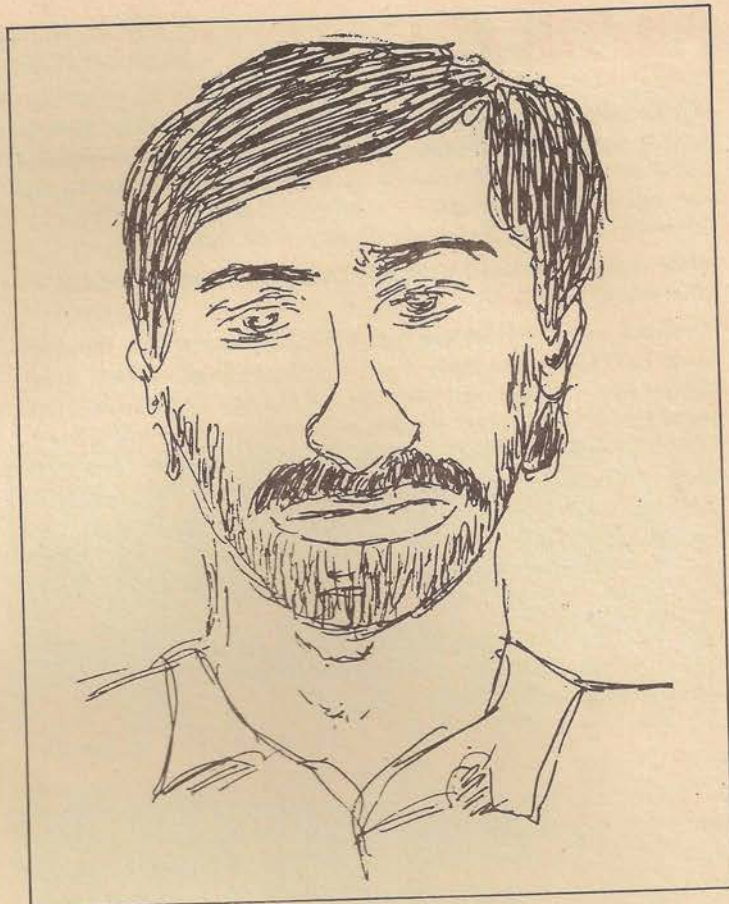
NAGI much after he joined C-DOT

Unfortunately, this reckless punster has turned reclusive — (one bump took a heavy toll?) probably on his dentist's advice. Informed sources say that he works on his Terminating Terminal Process between 9 and 5 — at night. Once he was asked "Do you play cricket or something like that?" "Yes, something like that" was Chandru's reply. And now, responding to his call, the youth of C-DOT Delhi play "something like that" on the grounds of Vishwa Yuvak Kendra.

R K Jalan was famous for his one liners "I'll land up unless I don't turn up". A promising career as a second Northcote Parkinson, was nipped in the bud, when he was snapped up by C-DOT. You just can't miss him. "If it isn't anyone else, it has to be Jalan". Jalan once spent most of his spare time (one opinion differed) developing an SDL package on an IBM-PC. The infamous "Jalan Functions" originate from him.

THE TWO AND TWENTY

Occupying the better half of the 8th floor, is the 22 member Maintenance Software Group. Using a Jalanism (Refer to relevant part of this article), "Maintenance Software is that which is not Call Processing, Peripheral Processing, OS or Administration." This is one group that actually believes, that somebody was serious when he decreed that the system downtime should be less than 2 hours in 20 years. God bless their simple souls! So in

their spare time, when they aren't leaving 2 blanks after every fullstop, or struggling to right justify their documents, they dream about Ultimate Fault Tolerance.

Always preceded by his exuberance, his voice and his cigarette, necessarily in that order, is Venkat Rajendran. Rajendran to his seniors, and Venkat to his juniors, he really believes in leading by example. So came the first week of August, he packed off his family to the distant shores of Tirunelvelli, jetted back to Delhi and firmly ensconced himself in 829, Akbar Hotel.

Review followed review followed review. Exhausted Maintenance guys tottered back home, if they were lucky to finish on the better side of midnight. More often, they stayed the night, like Venkat. 23rd August was the D-day. The Architecture Review over, it was thumbs up. The skies cleared. Venkat finally left Akbar. His family was back. A mute sleeping bag tells its tale.

The first in the Maintenance Trinity is Sunil Godse. A Maratha from Calcutta. No wonder, he regards the criss cross of the System Architecture like his own Howrah Bridge. Double Faults, Triple Faults — he swallows them all. Like a nimble acrobat — be it a criss or a cross he is their boss. His Module Configuration Manager is the patriarch that presides over the Maintenance empire. And when Godse leaves his lodgings for office every other Monday morning, his roomates wish him Goodbye or Goodweek, and they mean it.

The next in focus is A C Somayajulu — Julu to one and all. This angry youngman is a real bull in a China shop, especially when he returns from an occasional trip to Bangalore. For, what he doesn't know about Hardware isn't worth knowing.

Julu works on CPU recovery and System Initialisation. When he rings up Bangalore, bit by bit, he can dissect the Space Switch. No wonder, they are relieved when he occasionaly trips over his own shoelaces, while pacing up and down with the phone. We hope that with our stalwart Julu around, unlike that nursery rhyme of yore, it won't be a case of — "for the loss of a gate, an Exchange was lost".

The third in the Maintenance Trinity is Ani, short for Aniruddha P. Shrotri. Ani considers the right to blush — a fundamental right. His Module Recovery Process when it isn't helping the Module to recover from Software faults, can sometimes open its third eye and go around killing calls. So apart from MRP the process, there is MRP the concept — a backhanded compliment to the Absurdity of the Universe. And our Ani is a true Existentialist.

The petite T.L. Savithri Devi landed up from Guindy Engineering College on a June, dog day afternoon. She was from Madras and as homesick as they come. Come September, and she threw off the yoke of depression and started calling herself Savvy. Full of songs, rhymes and greeting cards, she is now the mascot of the Maintenance Group. She desperately wants to start German Language classes in the South Delhi bus. Any takers?

MTOS, CDOS, CHAOS?

The OS Group in C-DOT does what OS groups in other places do. They ported a system called MTOS and changed its name to CDOS. A tiny group of 6 or 7, it is unfettered by the chains of Switching or Telephony.

Kuldip Singh from TIFR heads the group. A strong and silent one, he does humour you sometimes by calling you boss.

Vinod Kumar Sajja from Hyderabad, is fond of Aztec Warriors and Cricket, and Abruptness. Once Vinod suddenly decided that being at the non-striker's position was not his cup of tea, and offered to switch places with the non plussed batsman at the other end. Vinod is a 68,000 wiz.

Sreedhar Sivakumaran once created a stir in IIT Delhi, when as a fresher, and with a lollipop service to boot, he won the IIT Tennis open. In C-DOT having created his own variation of the X.25 protocol, he promptly called it C.85.
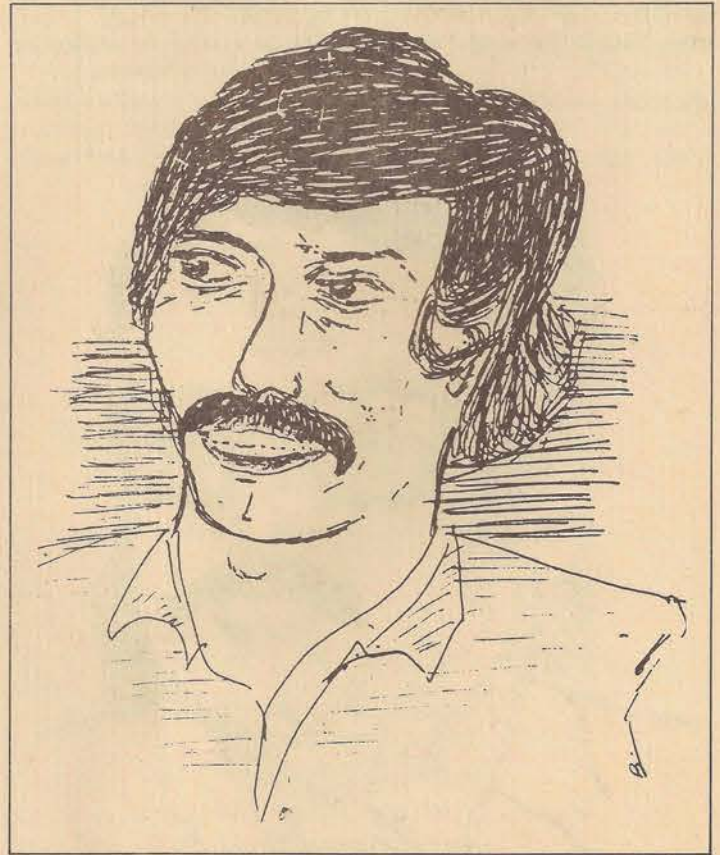
He often shows the alacrity of a Jack in the Box. A sample of the Godse-Sreedhar dialogues:

Godse: (On a Monday morning) How about a Maintenance byte?

Sreedhar: (Immediately) No problem!

Sreedhar: (On a Sunday afternoon subsequently, and ringing up office from home)
Hey Godse! — Say that again!
Say that again!

People ask him 'Ven cat?'
'Nine lives? Don't need that.
To smoke my way
Into a work-packed day,
Is the bright future I look at!'

5

THE 8-BIT CITADEL

The Peripheral Processor Group is the one that gets to work on those thousands of 8-bitters that dot the C-DOT Architectural landscape. TIC, TSC, SCIC, MFC, TTC — these are their playgrounds. Armed with a 2Mhz clock, they will soon get this blot of steel and silicon called Rockwell 6502 purring, and eating out of their hands.

By any quirk of fate if you happen to enter 825, the living room cum fortress of the BP group, with a cup of tea in your hand and a cigarette dangling from your lips, the frigid stare you are going to get will come from P K Gupta. Once you apologise suitably — after all a Lab is a Lab is a Lab, and minus the cup of tea and cigarette, you will find that P K Gupta is a nice chap really.

Guptaji or Sir as his group insists on calling him, is better known as P K. As the Group Leader of the PP Group he took on the gauntlet of implementing X.25 Protocol on the hapless 6502. After 6 months and 2 RDCs we are glad to announce that the ACK's, PACK's and NACK's are flowing serenely.

The best time to see the glory of the Amazing Silhouette, is at 8.45 a.m. any day, on the 8th floor New Wing. With the ample Hariharan leaning against the Fire Exit Hatch, it is truly BIG is BEAUTIFUL. In real life Hariharan, casts a long shadow on the 8th floor, notwithstanding the fact that his namesake G Hari works just opposite his room. From installing heavy duty Transformers, to writing Assemblers in Hyderabad, to Textile costing, to selling Computers for HCL, Hari is our very own Ernest Hemingway or Jack London. In all our Lok Sabhas or GBMs, there is no last word unless it is Hari's own last word. In 828, with his broad back to the world outside, Hari works on Message Decoding.
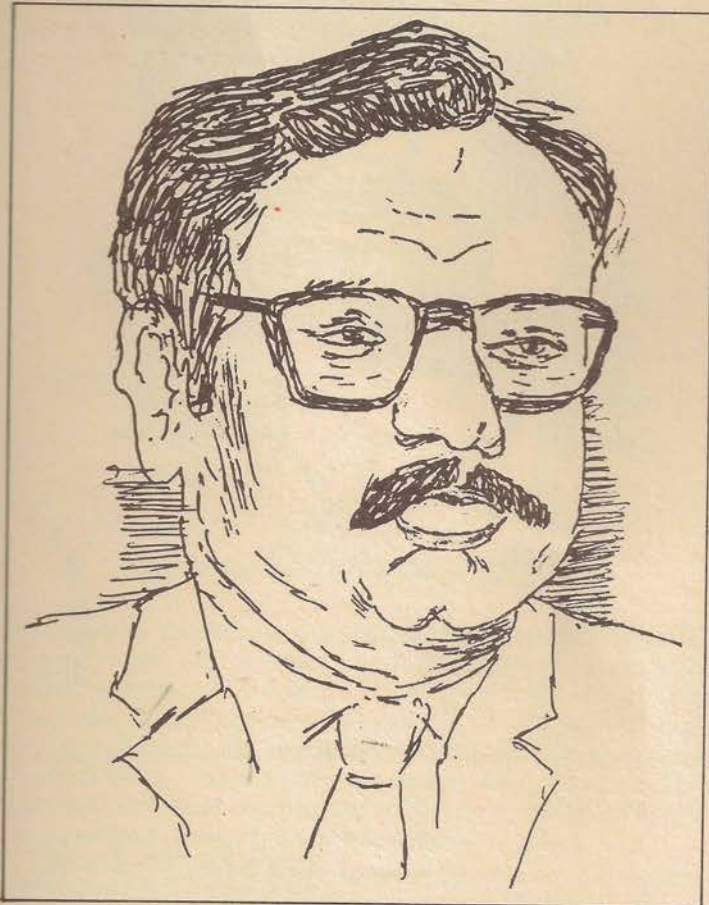
If there is one person who believes that a curve is the loveliest distance between two points, it is Naveen Shankar Saxena.

From studies, to amplifiers, to motorbikes, to girls, to Electronic typewriters, to Dumb Charades, his magnificent obsession now is to draw the ultimate curve. Unto this end, he preys on all available Engineers. Hauling them to his Tektronix Terminal, he coerces them to define the points on the screen, for that ultimate curve. Tongues soon started wagging, and now the joy of the romanticist is transformed to a mundane Specification Description Language (SDL) package. Like they say, all good things have to end.

But there is more to the Software Group than that. There is that "Little Prince" Nishant, the stalky Kohli, Minni — the Madame of the Time Switch ... Then there are those new groups — Database, Software Tools, VAX Maintenance, VAX Administration. But more about them later. Last but not the least, there is K.B. Lal who orchestrates them all.

Now, as Chandru has put it, is the time to take a Real Time Break.

• • •

K B Lal — the Great Synchroniser

ISDN — A GRAND VISION

The Evolution

The advent of telephone resulted in an analog network for voice with suitable interexchange signalling. Voice and data communication over analog network developed independently using modems with its own protocols, bit rates, etc. The advent of Pulse Code Modulation (PCM) transmission between exchanges gave an impetus to digital switching and Integrated Digital Network (IDN). Processor-controlled Digital Switching Systems (DSSs) could communicate on direct message channels giving rise to common channel signalling (CCS) for enhanced network-wide subscriber features. Voice communication was reduced to handling of 1s & 0s, suitable for data as well. But a 64 kilo bits per sec. (kbps) digital path could be exploited by a data user by extending the digital connectivity right upto his premises, eliminating modems and providing a quantum jump in bit rate. ISDN evolved from this idea. PCM-Codec moves into digital phone, eliminating ringer-bell, DTMF generator, 2-W/4-W converter and echo problems and simplifies mike & phone. 64 kbps digital paths can be used for voice and/or variety of non-voice applications including Personal Computer (PC)-PC or PC-Database communications over a universal communication network, users being able to plug any ISDN terminal into a wall socket be it PC, videotex, etc. Standardization is the key to the realization of this concept.

The Concept

On the user-network side, CCITT has identified certain reference points, see Fig. 1, and has standardized interfaces and procedures. This is important to stimulate the development of inexpensive terminals and their transportability. 2B+D basic access has been specified for a single user providing two 64 kbps channels for voice and/or data and 16 kbps channel for signalling which can also be used for slow-speed packet data and telemetery. 30B+D primary-rate access is for large users, PABX, LAN, etc., where the D channel is of 64 kbps. The S interface for the single user is two-way, multidrop and multiterminal, with a unique 8-pin socket where 4 wires are mandatory. For any terminal to communicate over the D channel with the local exchange in the message mode, LAP-D provides for message classes, rotating priority and collision detection. For non-ISDN terminals an adapter (TA) is specified. The S-bus can be interfaced to a PABX, RSU, remote ISDN-LU or directly to the local exchange. For interfacing to exchange, a transparent network termination (NT) and a line termination (LT) to the U interface or the digital line are required. The U interface, initially, is the existing local loop over which 144 kbps user data, duplex, apart from housekeeping bits, needs to be conveyed. Digital hybrid and adaptive echo-canceller techniques are preferred by various administrations to cater for 8-10 km length of 40 dB loss, with 4B3T line code to reduce the symbol rate. The primary access uses the standard 2-way 2 Mbps PCM links, TS 16 being the D channel, suitable for PABX, etc. LAN can use Star, Bus or Ring structure for the terminals. The primary access can have either 30 B channels or 5 Ho channels
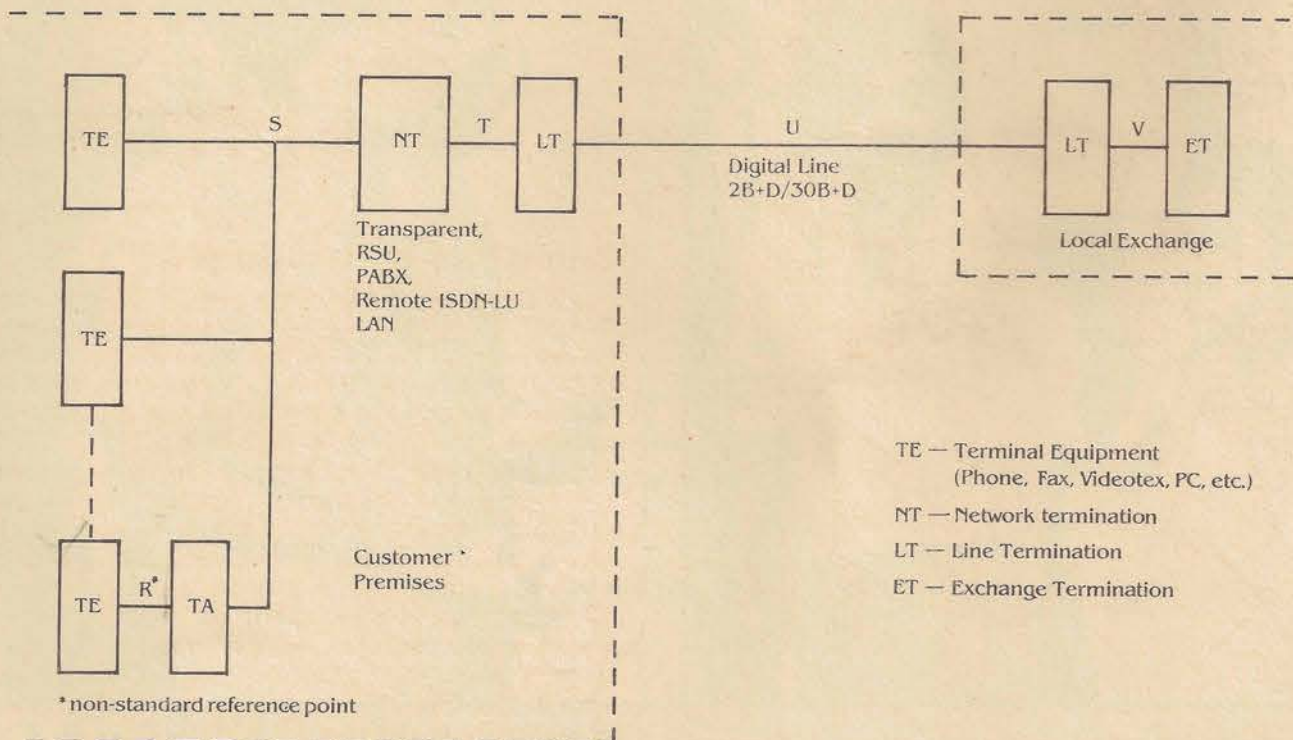

TE — Terminal Equipment
(Phone, Fax, Videotex, PC, etc.)

NT — Network termination

LT — Line Termination

ET — Exchange Termination

* non-standard reference point

Fig 1 a: User-Network Interface

7

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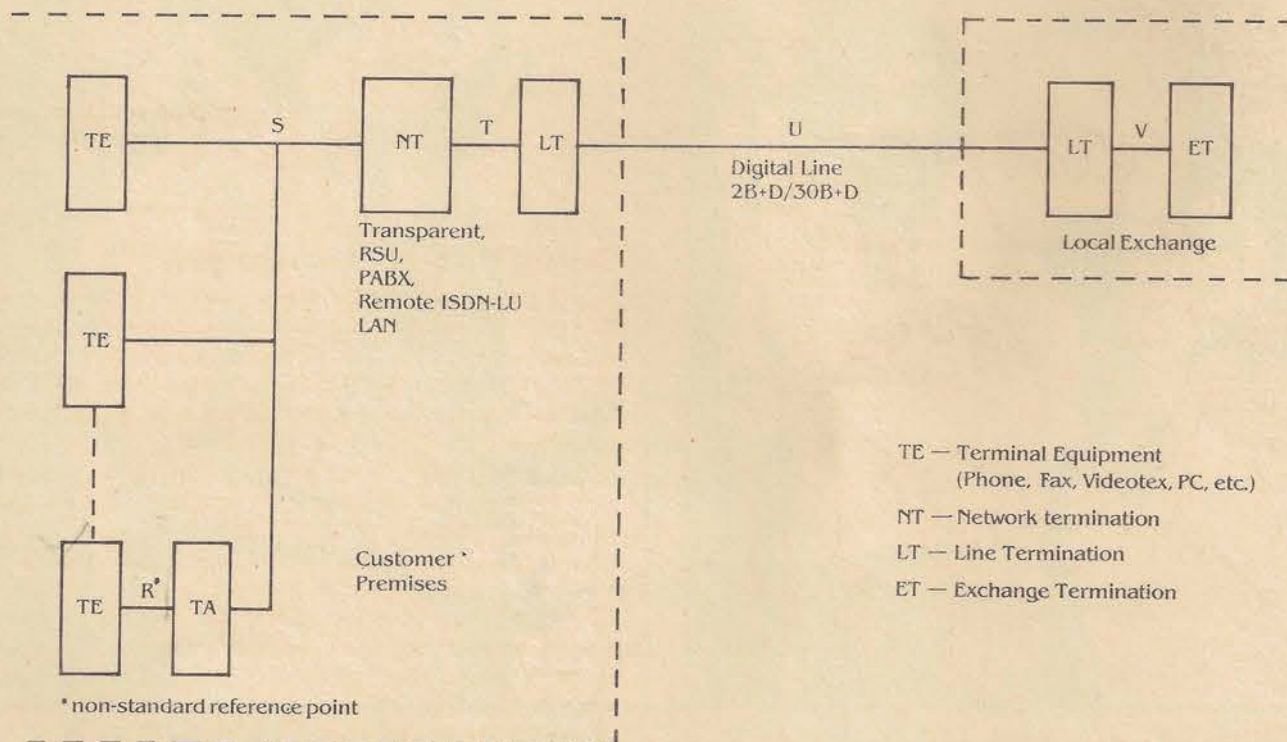

Fig 1 a: User-Network Interface

7

of 384 kbps for Hifi music, etc. or one H12 channel of 1920 kbps for moving video, using data compression. Later, with fibre optic cable, greater broad-band channels will be available. User can access any B channel for voice or data, in the circuit-switched mode. B channel can also be circuit-switched to a packet network by the exchange. Low-speed data packets can be conveyed over D channel to be packet-switched over the signalling network of the ISDN to different destinations, both connectionless and connection-oriented. CCITT has separately specified CCS No. 7 for ISDN to support ISDN user features, user-user signalling, packet-switching & transport on virtual data connections. CCS No. 7 is fast, powerful, intelligent and vital to the introduction of ISDN.

In place of the D channel, PABX, etc. can use E channel with #7 Protocol. Digital Access Signalling System (DASS) has been specified for user-network signalling, etc.

The concept envisions a global universal end-to-end digital communication network with standard wall sockets at user premises to which the user can connect standard terminals made by any manufacturer and communicate by voice, text or image, circuit or packet-switched, with another user, computer, database or service provider, using necessary bandwidth and paying on a transaction basis.

The Promise & the Reality

Similar to laser when it was invented, ISDN has been described as a solution in search of a problem. ISDN has ushered in the information age. European countries with integrated communication networks under the control of a single national administration have been in the forefront in the evolution. They can pace the progress of ISDN driven by environment and can make standard offerings of ISDN services to the users. India could be in a similar boat. US, with its multiple independent networks, some of them based on 56 kbps, sees it differently. The stress there is to provide an Integrated Digital Access (IDA) from ISDN user to the local exchange which acts as a gateway to the multiple networks of the ISDN, renamed as USDN.

VLSI technology has to play a big role in developing components that go into LT, ISDN terminals, etc. Inexpensive ISDN terminals and test equipment have to be developed. IDN and CCITT No. 7 are prerequisites. Standardization naturally helps in economies of scale. The vision of ISDN may give a great impetus to IDN, with a corresponding slowing down, if not stoppage, in the expansion of analog network. Since the analog network, at best can support voice-band data with modems, it is better to discourage the growth of analog network in a developing country like India and take a quantum jump into the ISDN of the future.
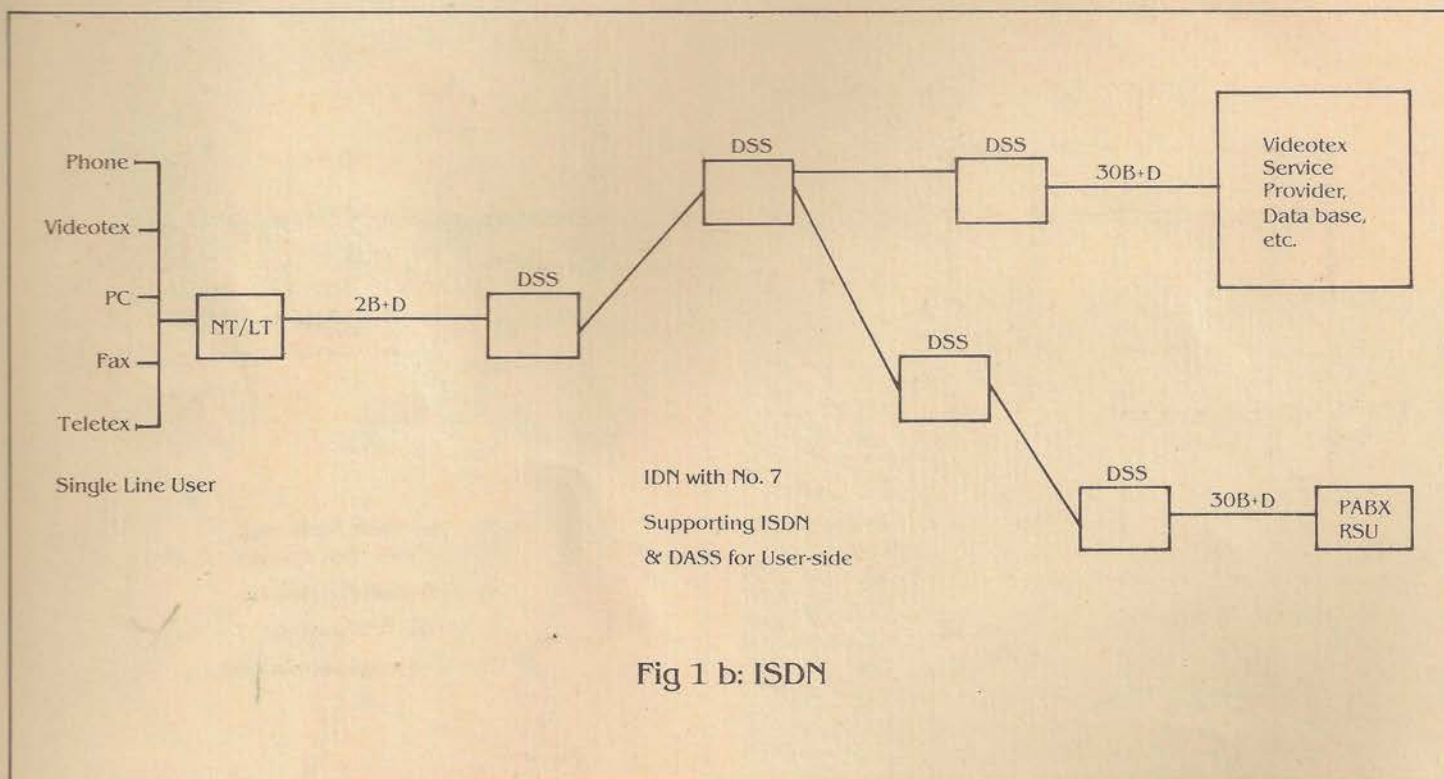

Fig 1 b: ISDN

METAMORPHOSIS

I woke up one morning, to find that I had changed into a Taxi. It felt strange. From being part of the race of Homo Sapiens, from my position at the top of the Darwinian Ladder, I had been given a violent shove, into a world of taxi cabs.

The supreme senate had passed a new ordinance, by which all humans were converted to various worldly objects. The wisdom of this, lay in the fact that objects were more receptive to management than humans. However, this simple fact of life (?) was beyond the grasp of the teeming millions who had awoken to find themselves as aeroplanes, book shelves, motor cycles, tables, chairs or taxi cabs (like me). The following shall attempt to enlighten:-

Consider for a moment how much easier it is to manage a taxicab.

First, your goal can be quantified very easily — hundred miles a days, six day a week.

On the seventh day you can be serviced.

Every month one can find out if you have covered the expected 7400 miles. If your mileage is to be improved, Hi-octane fuel could be used, your tyres could be changed, your upholstery altered etc.

The advantage also lies in the fact that your speedometer, odometer readings can be monitored every month so that you can always be used optimally. This would obviously result in a great sense of achievement for yourself, having performed efficiently and to the satisfaction of everyone concerned.

It is easy to motivate you to perform better because if you covered your miles regularly, you could even be entered in the Le'Mans rally. What joy! What pleasure! The sheer thought of being able to participate in Le'Mans and Monte Carlo. No one can complain, after all, you have been giving more miles, in the most fuel efficient manner.

It's perhaps superfluous to add, that you, personally would just find it very rewarding, to achieve the utopian dream of being engaged in an activity that gives you satisfaction, your superiors control and the entire society benefits.

At least now, don't you agree that the best thing that could possibly happen to you has finally happened?

NOTE: The taxicab argument provides for natural extension into other domains like aeroplanes, book shelves, etc. and is left to the reader.

"Where's the PABX?"

"The honeymoon is over"

THE NEW TESTAMENT REVISED

Version 1.1

The first book of DOCUMENTATION called GENESIS.

2 And the DOCUMENT was without form, and void; and darkness was upon the face of the Engineers. And the spirit of Roy moved upon the face of the printouts.

3 And Roy said, let there be Guidelines: and there were Guidelines.

4 And Roy saw the Guidelines, that it was inadequate: and Roy divided the Architecture Document from the Process Design Document.

5 And Roy said, let there be a Bela in the midst of the PDDs and let her divide the PDDs from the PDDs.

6 And Bela made the Guidelines and divided the PDDs which were under the Guidelines from the PDDs which were above the Guidelines: and it was so.

7 And the Guidelines said, let us make PDDs in our image, after our likeness: let them have dominion over the Pseudo Code, and over the Data Structures, and over the Messages, and over every creeping thing that creepeth upon the PDD.

8 And Roy blessed them, and Roy said unto them: Be fruitful, and multiply and replenish the shelves and subdue them: And have dominion over the Terminal Processes of CP, and over the Fault Handlers of Mntnce., and over every living process that moveth upon C-DOT.

9 And Roy saw everything that he had made and, behold it was very good. And the evening and the morning were the seventh day.
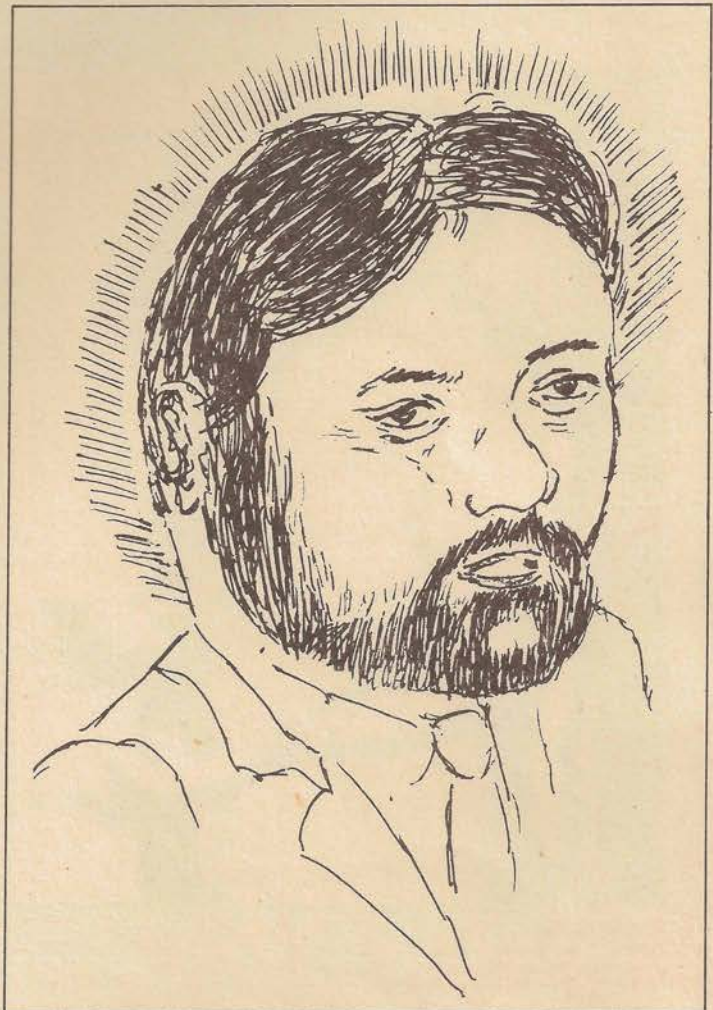
Roy may not like this but he doesn't have much choice. To live up to our image of him he will have to go through a hair raising experience.

दो प्रश्न

ढलते सूर्य की आखिरी किरण से —
मैने एक प्रश्न पूछा
क्या तुम कल फिर आओगी?
वह रूक कर, मुड़ कर
विराट वृक्ष की
छत्र-छाया में पड़े
भिक्षुक की आँखों में समाती चाँदनी की परथ को
देख़ कर,
मुड़ कर
बोली
हाँ, मै कल सुबह की पहली किरण बनकर ज़रुर आऊँगी !

मैने, भावना से एक प्रश्न पूछा
बदल रहा है समाज
बदल रहीं है मान्यताऱ्यें
ऐसे में, तू
काहे को करती है ऐसी बात —
सुन मेरे सखा
ज्ञानी करते बात विज्ञान की
योद्धा करते बात रणनीति की
पर मैं वहीं
हूँ सब में एक समान विद्यमान
इसी लिये तो मनुष्य तू आज भी जीवित है।

'साहित्य'

विचार

कल तक जो मस्तिष्क में थे,
आज अचानक बाहर हो गए !

किसी कविता के मुखड़े से,
कल तक शब्द थे और क्या थे,
उल्टे सीधे ही विचार थे,
आज अचानक गीत हो गए !

बचपन यौवन को दर्शाति,
कवि की रुचियों को तराशते,
आँखों में लिए सोचें,
आज अचानक दर्पण हो गए !

दूर हो रही कल की सोचें,
इतने सारे विचारों में,
सुन्दर-सुन्दर से विचार थे,
आज अचानक लुप्त हो गए !

उदय हुए जब नए विचार तो,
एक गीत की वो रचना थे,
घूम रही थी मेरी सोचें,
आज अचानक विचार खो गए !

सुनिये।
एक गोरी, दुबली, पतली, इकहरे बदन वाली
स्त्री जो सच्चाई की बेदाग, उजली साड़ी और
विकासोन्मुख मूल्यों की चित्रित कंचुकी पहने
हुई है नवयुग की इस भीड़ में
संसार के बाज़ार से लुप्त हो गई है।

कहते है, सभ्यता की सड़क पर
अनैतिकता की मोटर में सवार
कुछ घोर भौतिकवादी दुष्ट अपराधी उसे उठा
ले गए हैं।
पुलिस तमाशा बनी रही।
एक प्रार्थना है,
सब बुद्धिजीवियों से जो उसे देखे,
घर का रास्ता उसे दिखला दें
किराए के अलावा पारितोषिक भी दिया जाएगा
स्त्री का नाम है —
मानवता।

ललित ढींगड़ा

11
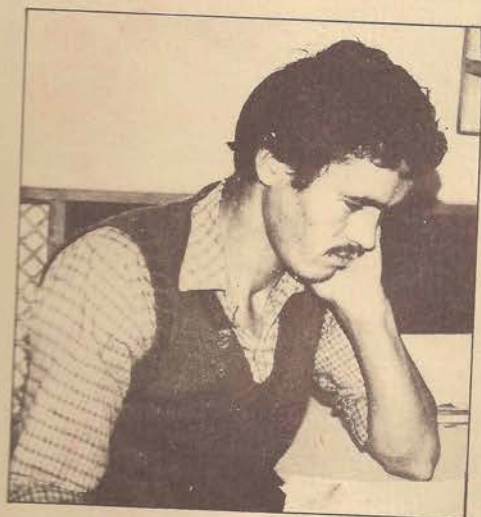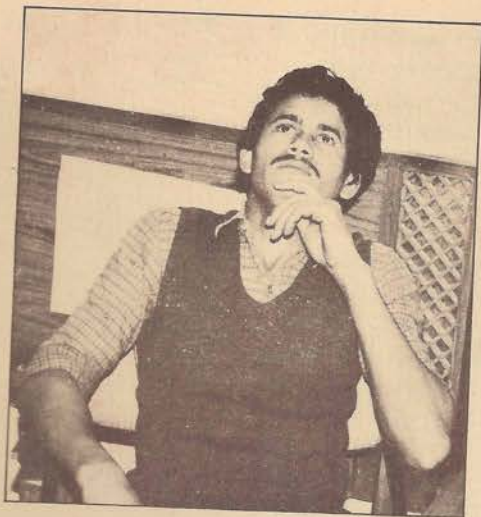
DEAR RAJESH

Dear Rajesh,

Could you please introduce 'Pongal' in the Canteen. ? Eating all this canteen grub makes me terribly (home) sick.

Yours etc.,

A worried Madrasi

Dear Worried Madrasi,

We cannot at any state introduce any specific dishes. Our researchers have tried it before and failed. Only after we make a dish, do we frantically try to decide what it is.

Dear Rajesh,

I have tasted Continental, Chinese, Mughlai and various cuisines. But I still haven't figured out your present weekly menu.

Yours etc.,

Curious gastronome

Dear Curious Gastronome,

We ourselves are still figuring it out.

Dear Rajesh,

Why have you stopped serving snacks in 822?

Yours etc.,

Hungry reviewer

Dear Hungry reviewer,

Because Mohan said so, and Mohan is an honourable man.

IN AND AROUND MILLERS ROAD

- Mohan desperately needs advice on how to be hirsute. Reportedly spied trying meditation to arrest the loss of hair. Anybody having suggestions (other than the obvious ones like using fevicol or walking upside down for example) please reach him at your earliest convenience.

- Karl reports that a member of the opposite sex has at least smiled back at him. Unfortunately, his buttons were mismatched, he had a shoe on one and a chappal on the other foot and had left the necessary buttons open. We wish him luck and assure him that aleast one more smile is on its way even if he is at his best, viz., normal.

- A shocking observation: Kiri was seen OUTSIDE the Computer room on Six different occasions in a single day.

- Ripu, the Demon laughed a mere twenty six times over THREE DAYS. When questioned about the reasons, he was a bit reluctant. I pacified him with a sick joke and he relented.

Reportedly plagued by horror dreams (psychedelic lights, ghostly figures, haunting echoes, etc.), he has developed an acute allergy to high frequency shrieks. This has robbed him of coveted company and he is at loggerheads with the dilemma.

Any samaritan around?

● ● ● ● ● ●

"UFF, OH, EK AUR NAYA CONSULTANT?"
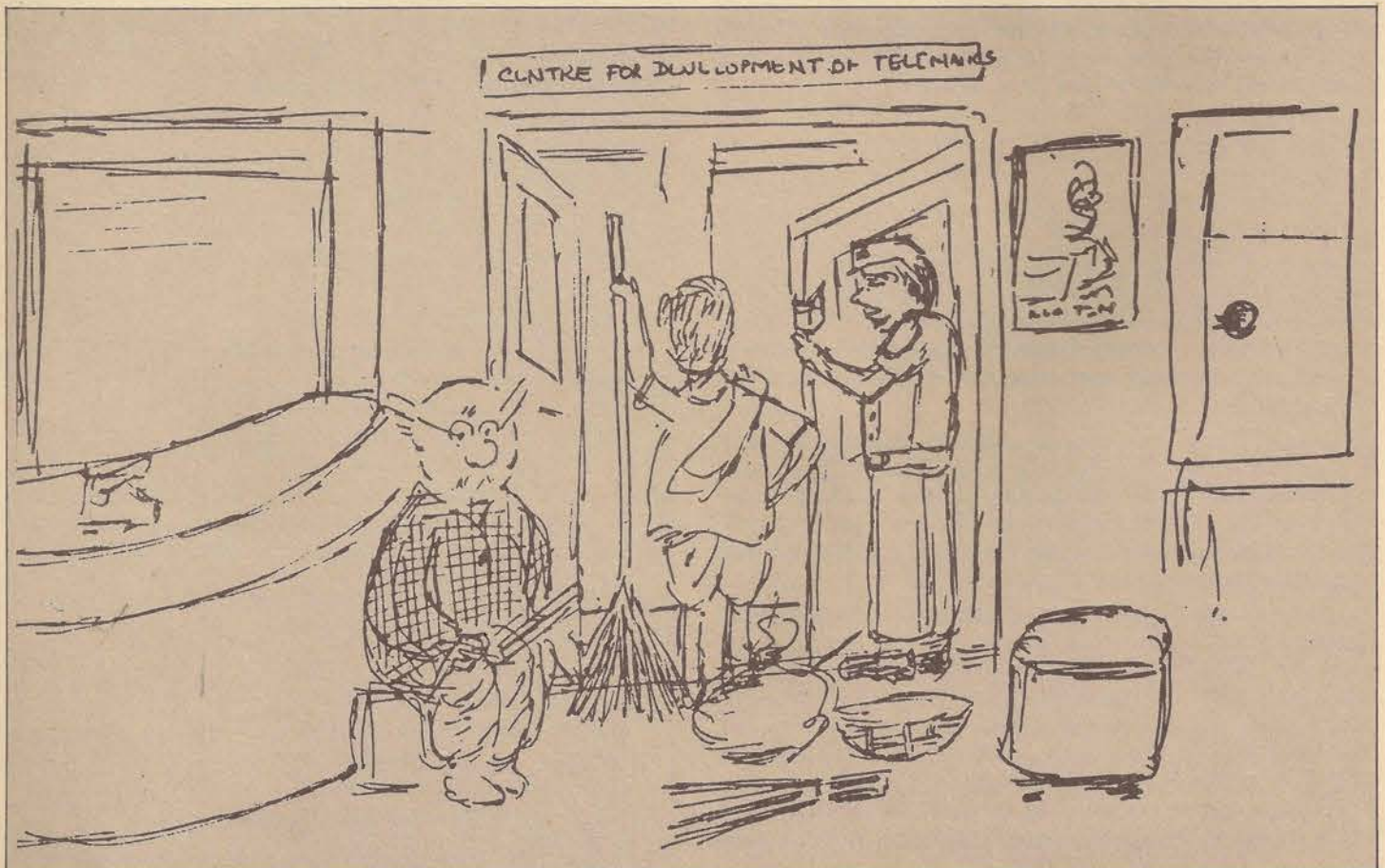
FOR THE YOUNG AT HEART

We shall take you by the hand into the world that you long to be in, one step at a time, shortly.

To a world more true
Than the one you live in,
Inviting the worthy few
We merrily dance in.
Flowers of every hue
With the fairies peeping in,
Tell us about rue
True love and compassion
No sesame, no clue
These magic doors to open —
Happy to have you
We take you to this land of frolic and fun

His brothers called him. He was one of the princes of the sun. To bring life-giving light to the people of the earth was his greatest joy. Every morning, after paying homage to his father, he would start on his day-long journey to the earth. Leaping forth, he would set out with his brothers, all joining hands, singing the song about the eternal light bringing hope into the hearts of men. As he and his brother kissed the tall cathedrals and the temples, men would rise to their daily tasks.

His brothers beckoned to him. It was time for them to start their return home. But he heeded not. Words of the child still haunted him, "Oh if I had my own sun, I would never let him go down. How I love the Sun! Yet why, does he leave me? Sun, golden Sun! Do you not like me? Everyday I sing to you as my wise friend, the Frog, advised:

"O Giver of Light!
Give me light
Light to see
And like thee to be
O Brightest of the Bright!""

So the child had prayed day after day, for the past six months. He wondered if the child understood what he said. Who would have taught him the Ancient Prayer, the Prayer only he and his brothers knew? He wished he could help the child-the child only wanted a bit of brightness, of which he had plenty.

"Come on," his brothers hurried him. He heeded not. Weren't all these men like this child, he thought. They wandered here and there and all they wanted was a bit more love. They saw only the night, they did not want to realise that the Sun would rise again. They got so involved with night, they forgot.

"O Giver of Light": his brothers looked back at him for the last time. This was their call. He heeded not. To give some hope to this child, and to these men, who were a bit like this child! He would have gladly dissolved himself if that would have helped. He thought of all the men, the beasts, the flowers of the wild, the stones and the child, who waited for the day, for the sun. As his love embraced all, he sent out a thousand arms to embrace all, to share the gold he had, with all of them. He stood rooted to the spot as night caved in.

"Oh look at the Sun? He has come to visit me. What a beautiful flower! It shall keep fear away from my heart, when night sets in. The number of times my teacher, the wise frog asked me , 'was then the sun a dream because there is night ?' I did not understand him. Now I do, because there is my sunflower to remind me of the sun". The child danced around the sunflower.

So stood the sunflower reminding the world of the love a prince had for it. Yet the Sunprince could not forget his home and his father. He turned in the direction of his father as the day passed by, paying consant homage to his father

'O giver of light _____'

• • •

PEN PAL'S COLUMN

Sunil Pai and Sanjay Sawhney joined C-DOT Delhi on Ist June, 1985. They had just graduated from IIT, Delhi. And like most IIT'ians go, they went-to the US. But they haven't quite got over the eventful 3 months they spent in C-DOT. They remember us often, and write occasionaly.

Says Sunil Pai writing from the University of New York at Buffalo, (on the American side of Niagara Falls)

"Hi there _____

It snows very heavily out here. This morning, I had to shovel a whole lot of snow off the walkway _____

Out here I have learnt five programming languages Modula 2, Lisp, C, OPS5, Prolog besides Pascal. Modula 2 is certainly a language of future. Sooner or later it will replace Pascal as an instructional language and (hopefully) C as a Systems language. How are you liking C? Debugging C code is not exactly what somebody would look forward to. If I were you, I would exercise utmost caution while coding. Communicating Sequential processes, are among the most difficult to manage.

I shall be the most happy guy if C-DOT succeeds in its venture, for it is so important to the country. I heard some news that Rajiv Gandhi has given Abramson (of ALOHA Network fame) a massive contract at the University of Hawaii to design a system to manage over a lakh earth stations. Is it true?

I heard of C-DOT's gesture towards Sawhney. A company which can do such a thing for a person who has been with them for just 3 months is a company with culture _____ Please convey to Venkat my regards. I certainly admire that man and I am very sorry to have ditched him.

With good luck to all.

Yours sincerely
SUNIL PAI"

Sanjay Sawhney was pleased as punch, when C-DOT posted him a Certificate of Appreciation for having participated in the design of the Software Architecture. He writes very frequently — just about every other weekend from his apartment near the University of California in Santa Barbara. He has done well in his first semester, studying for a Masters in CS, and scored a perfect 4 on 4.

Congratulations Sanjay!

He says in a letter to Sreedhar, his hostelmate for 5 long years

"Hullo Sreedhar ,

Just when I had given up all hopes of hearing from you, your familiar handwriting _____

An average person here works about 1½ times as much as an extremely hardworking Indian does. Once about 3000 persons dressed up in the weirdest costumes you can think of, assembled at nighttime about a Km. from my apartment. There was a lot of din (The whole drama was a part of their celebration of Halloween-some festival about ghosts and witches) _____

In case C-DOT purchases UNIX tell them to buy LEX and YACC. Dixit may find LEX useful in designing command syntax. Secondly, definitely buy a powerful debugger like dbx. From my experience with C (when the magnitude of programming is phenomenal), without a good debugger, one might as well give up.

In case anyone is coming to Chicago, or any where is US, he can ring me up at 805-963-2069 anytime after 8.00 p.m.

Yours sincerely
SANJAY"

Thanks Sanjay, we'll make a Consultant out of you someday.

ASTRAL PROJECTIONS IN BANGALORE

'C-DOT has money to spend. Find ways to do it.' Wise words. We sat down to unravel the shrouds surrounding obvious ways. Ashok's Dosas were out-not because of their exhorbitant price, but, for their poor, soft quality. Since we always believe in keeping fit, spending for unnecessary items like lunch (lavish stuff really) was ruled out too.

We hit upon a novel idea. Walked to an astrologer sitting on M G Road who believed his pet parrot voiced the clairvoyant feelings readily.

We paid him a handsome price to tell us-not about our future (with C-DOT we know it s gonna be great) but about our dear friends.

Parvez Akhtar, gifted to this world on August 15th, Amba Prasad who ventured here on the 27th and, of course, the moonylord-Rama Chandran on the 22nd.

Setting up a parrot frequency to voice path decoder wasn't easy but we did it. Now gentlemen, the much awaited

WHAT THE PARROTS FORETELL:

PARVEZ AKHTAR: A distant journey in the offing. A sad demise from the happy domain of bachelorhood in the immediate future. Ill health (resulting consequently) shall plague you on three ocassions.
Lucky number: 13, D (Hex format) 1101 (Binary)
Unlucky colour: (Beard) Black.

RAMACHANDRAN: A bright year. If you continue to sport the sign of the Lord on your forehead, romance is in the air. You will be required to work late on 169 days, work very late on 38 days, work hard on 26 days and work for 365 days at your job. But do your job well and a pleasant surprise a waits you at the end of the year — namely — your birthday. Meanwhile, bathe regularly, keep smiling and chant 'Jai Ganesha' daily.
Lucky number: 007.
Lucky Colour: Buff (Skin colour-sans any Clothes on)

AMBA PRASAD: More drawings, larger drawings, GREAT drawings. C-DOT will lean heavily on you in the years to come. Chances of meeting the person you desire are high. However, chances of meeting undesirable persons are higher.

Lucky numbers: A3, A4
Lucky Colours: White, pencil black, Ammonia blue.

dated: Aug 10, 1985

OBITUARY

We offer our sincere condolence to

- Padma Kumar who lost his father
- G B Meemamsi who lost his parents
- J P Verma who lost his father
- Rashma Gulati who lost her father
- S G Pitroda who lost his father

MILESTONES

*"Have these three Rings of your life
The engagement Ring which
is closely followed by the
Wedding Ring
And comes dear pals, the
SuffeRING"*

Collected by
P.K. JAMES

MARRIAGES

* G. Sridhara with K.V. Asha on	2.9.85
* Parvez Akhtar with Shahida Shaheen on	15.9.85
* Minni Kanwar with Narendra	18.9.85
* Mukesh Agarwal with Manjula on	20.10.85
* Atul Varshney with Renu on	25.10.85
* Ritu Malik with Suresh Kumar on	18.11.85
* Sumit Ray with Sushmita on	14.12.85

BIRTHS

* Son to Matange on	13.10.85
* Daughter to Anurag Agrawal on	8.11.85
* Daughter to Lalit Dhingra on	16.12.85
* Daughter to P. Sivasubramaniam on	3.12.85

फ़र्क

अगर मैं अपने आलीशान आफ़िस की नवीं मंज़िल से एक कंकड़ भी फेंकूँ तो शायद वह 'निरुला' जा कर ही गिरेगा, जहाँ '२१ लव' से लेकर हेमबरगर, ढंग-बेढंग नाम के नाना प्रकार के खाद्य पदार्थ उपलब्ध हैं। यह वह मशहूर जगह है जहाँ हमारे आफ़िस के साथी अकसर कॉफ़ी पीने के बहाने जाते हैं। ठीक ही तो है, निरुला का माहौल है ही कुछ ऐसा — दरिद्र नारायणों के इस राष्ट्र में, जहाँ रोटी मिल जाना ही पौष्टिक आहार की परिभाषा हो, वहाँ ऐसे विशिष्ट खाद्य समृद्ध 'द्वीप' बहुत कम हैं। फिर अगर मौका मिले, चाहे सिर्फ़ कॉफ़ी या आईस-क्रीम खाने का ही, तो क्यों छोड़ा जाये !

मैंने भी अपने साथियों के साथ कई बार ऐसे मौके का सदुपयोग किया — कई बार निरुला गया। इस परिचित-अपरिचित वातानुकूल एवं वार्तानुकूल वातावरण में अपने से कई वर्ष छोटे स्कूल के छात्र-छात्राओं, प्रेमी-प्रेमिकाओं व खुशमिज़ाज़ नौजवानों — को मौज-मस्ती के साथ खाते-पीते देखा है। एक बार तो इक्कीसवीं सदी के भारत के भी दर्शन हुये ! अपको शायद आश्चर्य हुआ हो — यकीन कीजिये, सचमुच मैंने अगली शताब्दी के भारत को देखा — 'पंक' संस्कृति के अनुयायी। उनमें से दो लड़कियों ने तो अपने लम्बे बालों को गुलाबी व हरे रंगों में डाई कर रखा था और अपनी स्कूली पोशाक पर रेगन, विक्टरी, ब्रूस इसप्रिंगस्टीन और न जाने क्या-क्या अनाप-शनाप लिख रखा था। वे सब अपने किसी एक मित्र का जन्म दिन मनाने आये थे। सच, भारत अपनी पुरानी मान्यतायें कितनी तेज़ी से बदल रहा है, हम अब 'पंक' संस्कृति में अपने जन्म दिन मनाने लगे हैं !

हो सकता है कि आपको मेरा यह दृष्टिकोण संकीर्ण लगे। मगर फिर . . . बात सिर्फ़ दृष्टिकोण की ही तो है।

बहराल, एक बार जब मैं कॉफ़ी पीने गया तो वहाँ मेरी मुलाकात बीसवीं शताब्दी के भारत से भी हो गई। प्रतिदिन की तरह (उस समय भी)काफ़ी भीड़ थी। पर उस भीड़ में मैंने एक 'अपरिचित' सा चेहरा देखा। अपरिचित क्योंकि उसने मेरी तरह कोट, पेंट या कोई जीन नहीं पहन रखी थी और न ही वह किसी 'सभ्य' परिवार का लगता था। उसकी कमीज़ का कॉलर फट रहा था। पैबन्द लगी उसकी कमीज़ शायद कई दिनों से धुली नहीं थी। इतनी ठंड पड़ने पर भी वह सिर्फ़ कमीज़ और निक्कर पहने हुये था। मुझे उत्सुकता हो रही थी यह जानने की कि यह लड़का यहाँ आकर हेमबरगर खाने का साहस कैसे कर पाया है। आखिर क्या गरीबों के पास भी साहस व आत्म-विश्वास होता है ! कौन तोड़ता है इन्हें — मैं, आप, या वह . . . अन्त में मुझसे रहा नहीं गया, मेरे कदम खुद-ब-खुद चल दिये उसकी तरफ़। कुछ ही क्षणों में मैंने अपने आपको उसके सम्मुख पाया। बात शुरू करने के लिये मैंने मौसम का सहारा लिया। "ठंड काफ़ी है, तुम्हें नहीं लगती?"

"लगती भी हो, तो क्या करें।" उसने तपाक से उत्तर दिया। मैंने फिर पूछा, "क्या काम करते हो, दोस्त।"

"आप जैसे लोगों की किस्मत चमकाता हूँ, समझे — बूट पालिश करता हूँ।"

"पढ़ाई-लिखाई भी करते हो?" मैंने उसके रुखे जवाब के बाद भी बात जारी रखते हुये पूछा।

"हम जैसों कि पढ़ाई स्कूल में नहीं, सड़कों पर होती है। स्कूल में जाने के लिये बहुत पैसे चाहिये होते हैं — वह आपके पास हैं, इसलिये स्कूल, कॉलिज आप बाबू लोग जाते होंगे।" उसका सटीक सा उत्तर था।

"अच्छा दोस्त, निरुला अकसर आते हो क्या?"

"नहीं, आज दूसरी बार आया हूँ।"

"यहाँ आते हुये तुम्हें डर नहीं लगा — मेरा मतलब कि तुम्हें यहाँ यह लोग घुसने न देते तो . . .।"

"आप दोस्त कहते हो, इसलिये आपको बताता हूँ — अच्छा खाने-पीने की इच्छा और खुद्दारी तो हम गरीब लोगों में भी है, फिर जब पैसा देकर मैं चीज़ खरीद रहा हूँ तो डर किस बात का।"

मुझे अपने प्रश्न का उत्तर मिल गया था। कानों में उसके शब्द 'जब पैसा देकर मैं चीज़ खरीद रहा हूँ तो डर किस बात का' चुभ से गये। क्या सब कुछ पैसा ही है? क्या फ़र्क है उस लड़के व पैसे वालों में ? क्या आवरण और पहनावे का ही सिर्फ़ फ़र्क होता है?

इन प्रश्नों का उत्तर सोचते हुये मैंने अपने कदम तेज़ी से बाहर सड़क की ओर खींचें। मैं आज भी निरुत्तर हूँ, क्या आप इनका उत्तर दे सकते हैं . . .