

## **Executive Director's speech on 14<sup>th</sup> Foundation Day – 26<sup>th</sup> March 2001**

Prof. Ramamurthy, who has earned the reputation of a scientist of national and international status, and an able administrator, who in his position as Secretary to the Govt. of India in the Ministry of Science & Technology, has been instrumental in advancing a large number of scientific collaborations between India and other countries. His strong belief in success of indigenous technologies to lie in commercialisation was evident that he set up a Technology Development Board which nucleated 70 plus knowledge based industries.

Shri. Kohli, who in a short period of only a few months of his being Secretary in the Ministry of Information Technology has earned the admiration of software industry and impressed with his vision and clarity and a very liberal approach in development and administration of scientific institutions.

Prof. Paulraj, a successful soldier and a sailor and a scientist of international reputation with a number of awards and accomplishments to his credit, aptly described as one of the e-Gurus by Business India, and a person who all C-DACians cherish memories of his short stay with C-DAC in its formative years.

Acad. Belotserkovskii, a Lenin prize winner, which is the coveted Nobel Prize of Russia, and a scientist who turned 75 last year but still keeps moving with the same zeal and spirit as I saw in him some ten years ago, and above all a very dear and close friend of C-DAC.

We also have amongst us today a large galaxy of distinguished professionals, Prof. Kolaskar, Prof. Ram Takwale, Hon'ble Dhariaji, Mr. Jhaveri, Mr. Dhaul, Prof. Govind Swaroop, Prof. Vasant Gowariker, Mr. Sarangi, Cmde Khandekar, General Dua, Dr. Mitra, Dr. Kale,

Distinguished guests and members of C-DAC family

A very good morning and very warm welcome to our 14<sup>th</sup> Foundation Day. On my own behalf and on behalf of the entire C-DAC family, I once again bring to you our greetings and best wishes for the New Year on Gudi Padwa.

This auspicious day has not only become a landmark among the important events that done the city round the year, but is also the day of pride as it was on this day thirteen years ago that we saw the seeds of one of the most celebrated Indian scientific and technological accomplishments sown, the day that C-DAC took birth. A vision come true. But not without hard work, dedication

and commitment of our members. We have come a long way since then, passed through the periods of trials and tribulations, memories of the trauma and triumph, the experiences of agonies and ecstasies and finally we stood victorious as we did in our endeavours.

Today we see ourselves as a proud model of successfully transferring the fruits of our long and sustained R&D work to the market place. A role model for many other research and development enterprise. And we are fortunate to enjoy the confidence of our parent, the Ministry of Information Technology. Fortunate to enjoy your appreciation and patronage too.

We are amidst an exciting time when information technology has thrown mind-boggling opportunities to the fore. But an opportunity we recognise that is to be converted from no less challenges. The challenge of market forces, extremely fast developments, high attrition, and the challenge of technology to be brought to fruition in a most cost effective manner with greatest of speeds. Standing at the doorstep of the new millennium, like any other information technology enterprise, after we crafted our vision over an year ago, we have created areas of niche and dedicated ourselves with due regard to this reality of challenges. Our belief is in doing business driven by R&D, and that is what I would term as the hallmark of a successful enterprise. A large number of such enterprises constitute an enterprise nation, and that the nation is surely on the path of becoming an I.T. superpower, that our government has set a dream for all of us to realise. And I firmly believe that is rightly to come from a position of technological leadership. A leadership that brings pride to our scientists and technologists, self-reliance and above all greater economic security to the country.

As I stand before you today, I am reminded of our proud achievements that I shared with you last year at this occasion. This year, equally, was a very satisfying and encouraging year that witnessed C-DAC's activities continue to grow both physically and financially. The scope of our activities in the diverse areas of information technology today cover as wide a canvas as to catapult C-DAC truly to a position of an established information technology solution provider. The activities encompass, surely Research and Development, Advance Computing Training, Consultancy Services, and Commercial business through system integration and advanced computing solutions.

We looked at our basket of products, technologies and services, and are overwhelmed to find such a diversity. I would like to share with you the glimpse of these petals from our flower basket.

An area of our focus in the year was on developing and deploying eGovernance solutions. Ever since the pronouncements made by a number of State Governments on their information

technology policy, we have been interacting with them on their proposed eGovernance initiatives. We started with projects in Maharashtra and Andhra Pradesh, and then carried further our efforts in Karnataka, Gujarat, UP and MP, and as a result we currently have an activity in each of these States, with more to follow. A hallmark of the success has been, of course the solution, our patience and a very proactive top level support and commitment from the Government. We now have applications in a wide range of operations of Government.

Realising the financial constraints, we have to devise innovative mechanisms to make eGovernance achieve the same objectives with limited investment on the part of the Government. The outsourcing model through an ASP approach is therefore being worked upon, and this is one area that we are diversifying to enable outsourcing of services by the States, and offer enterprise solutions.

In another initiative in this direction, we participated with the Ministry of Information Technology in a unique experiment on setting up the Centre for eGovernance for showcasing the eGovernance applications developed, in order to promote their replication to reduce time and costs involved in deploying applications in various States. We were quite encouraged by the response from a larger number of State officials who visited the Centre.

Multilingual computing has been an area of C-DAC's focus, as its another Mission for a decade now. It was indeed a foresight as it was then realised that for the information technology revolution to touch the masses in our large multilingual geographically dispersed country, multilingual computing is going to be the key factor. C-DAC's, popular among the masses, GIST technology has established its brand image with close to two dozen different products and technologies, serving the cause. It has been our unique and rewarding experience as the only one country in the world where we had covered eighteen languages and fifteen scripts with quality fonts at one place and one time. A large team of 60 plus professionals have been working assiduously to bring newer products keeping the direction of technological advances in view.

Ladies and Gentlemen, we had a track record of developing and bringing out products every year in this area. I am happy to inform that this year too, we have released following new products to keep the market lead and provide technologically contemporary solutions. The products are:

IPlugin : an Internet enabled software tool

ISM 2000 : a multilingual office automation solution

and more products to come as we go into the Q1 of the coming fiscal year.

We blissfully noticed ourselves placed by the student community at large as a successful model of a training institute that grew from an R&D set-up, close to the technology. Interestingly enough our training initiative grew from a need that arose for a number of skilled personnel needed to partake in our high performance computing initiative. It thus started in the form of Seminars and Workshops which grew to a structured course. And as similar needs became apparent by the advanced computing and software technology industry in the country, it took shape of course offerings at Centres authorized by GDAC. That is how our Advanced Computing Training School (ACTS) came into existence. Foresight, long dedicated hours of work, and a business accumen together became the hallmark of a successful ACTS that it is today.

Ladies and Gentlemen, we are today a proud collection of 100 network of authorised training centres spread in 16 different States in the country offering 10 different courses designed to address diverse market needs and skill requirements. This year witnessed over 20,000 students pass out from the school turning out quality-trained manpower like a University does, without being called one.

Sir, it is a clearly established fact that there is very little technology that grows in isolation. We need innovators, marketers and users all together. Most contemporary developments require inputs from all these disciplines and Research and Development is essentially a team effort. We are a technology institution, and indeed wish to continue to be recognised as one. GDAC has been developing the technologies that are key to our needs, and GDAC has been also created to look into those technologies that are controlled and needed for self-reliance. I present before you a glimpse of these technologies that we are currently working on.

High Performance Computing technology and application is the area with which we were born, and we continue to be attached to it mentally and physically both. Our current development efforts are going on in two directions. One to build more contemporary and efficient technologies for the switch network, reconfigurable computing, system software tools and utilities. This is the key area that we believe stand us against our contemporaries. We hope to come out with a newer system in our 3<sup>rd</sup> Mission which is currently in progress. The other area is to develop new applications and create wider research interest among scientific community in the area of parallel processing.

The key areas of applications of our interest in this context are:

Weather modelling  
Computational Fluid Dynamics

Seismic Data Processing  
Bio-Informatics  
Structural Mechanics

Sir, I am happy to inform that our high performance computing teams have installed an aggregate of about 100 Gflop Computing power this year at various sites. As part of this, they have accomplished a major and important project in this direction by completing delivery of our PARAM 10000 system to twelve selected premier academic institutions in India. Close to 100 project activities are being initiated in various science and engineering disciplines of their interest, and over 200 scientists and researchers would be working at these institutions creating a large mass of expertise that will be available in the country for front line compute intensive applications. C-DAC has also identified 18 projects of its interest which will be supported at these institutions.

With the information technology Act in place, and the implementation of various provisions of the Act being witnessed, at C-DAC we have looked at this opportunity from the angle of technology providing high level of security through the use of advanced algorithms for highly secured cryptographic keys and also building Virtual Private Networks (VPN) for specific applications. The work on this 2-year project sponsored by the Ministry of Information Technology is progressing, and we are soon to come out with a Beta product. This will help enhance solutions in e-Commerce and other information security applications over public networks.

Our work on building coveted Digital Library is continuing. As phase one of this project we are presenting to you today later in this function a Sanskrit Authoring System which is a compendium of Indian Heritage residing in our fourteen Vidyasthanas covering four Vedas, six Vedangas and four Upanyas, a real treasure of knowledge. This will provide multilingual on-line readers for Bhagavad Gita, Vishnu Sahasra nama and Rigveda for those on the net.

In order to extend fruits of information technology developments to the Society, we were carrying out developments in the area of Telemedicine. I am happy to inform that we have reached first delivery stage of this project. We are launching today 'Mercury' a software for an integrated telemedicine solution. You will hear more about it during its demonstration in this function.

Organisations dealing with large amount of data, both Government and Corporates, require decision support systems and intelligent analysis tools for well-informed decision-making. Data-mining and data warehousing are eminently suitable for such applications. C-DAC having built expertise in this area, successfully completed and delivered a project on multipurpose information warehouse for the State of Andhra Pradesh. The system uses our PARAM as the platform of

operation and a data warehousing software running on it, to provide decision support capability to the Government officials in their areas of responsibility. We are now extending these technologies and skills to address needs in service sectors of Telecom, Agriculture, Financial & Capital markets.

Once again turning our attention to passing the fruits of information technology developments to the masses, the ancient wisdom and modern information technology together have resulted in our product LILA (Learn Indian Languages through Artificial Intelligence), which was launched by the Honourable President of India at the Golden Jubilee celebration of Hindi the official language of the Union. We extended this product by combining the technologies of video streaming and interactive on-line tutoring simulating a virtual classroom to offer Web LILA, making learning Indian language easy on the net. I appreciate the vision with which indbazaar.com came forward to offer this facility from their very popular family portal.

Multimedia has become a popular name among users of information technology and communication for the masses. At C-DAC, our National Multimedia Resource Centre set up with initial support of the Ministry of Information Technology has through its two years of development efforts brought out innovative tools and products, like Shaili, Quick MM album, Encyclopaedia, etc. for a variety of entrepreneurs adopting multimedia in their profession. The Centre has now put together on their NMRC portal an exhibition, Digital Karigari, of a number of multimedia creations by the students who come to take our Diploma Course in Advanced Computing Arts. I invite you to visit this portal on our C-DAC site.

Recognising that CORBA (Common Object Request Broker Architecture) has emerged as an important tool in distributed, embedded and real-time systems applications, C-DAC has developed Real time Fault tolerant architecture for Distributed Computer Systems that are needed in process control, industrial automation, telecom and other critical applications. We are sharing this work in a Workshop scheduled next month while we continue to offer real time solutions to Power sector.

Recognising the growing need with administration, planning and management for spatial and non-spatial information acquisition, analysis and dissemination, we have created a Geomatics Group to address these needs. It is a unique combination of geo science and informatics expertise that has helped us to extend support to such growing needs in India with a number of organisations.

Sir, as I stated in the beginning, the activities of R&D in an organisation and the organisation itself have a symbiotic relationship. The R&D is meant to create innovations and the value it is expected to provide to the organisation. The organisation therefore becomes a venture capital invested in its R&D, and is the recipient of the intellectual assets it creates through which it generates business. The R&D and Business therefore have to work together to enhance value. C-DAC today is shaping up its activity keeping this reality in mind.

Encouraged by our Governing Council's support in this direction, at C-DAC our business activities grew through the untiring efforts of our Business Divisions at our various Centres. I am happy to share with you our once again pivotal performance generating business of around Rs.80 crores in this fiscal year which will close in five days. In a highly competitive environment where even with highly professional business practices followed by the established corporate bodies whose sailing has not been without tribulations, a performance from an R&D institution that C-DAC is, I am sure you consider it creditable, and for this our Business Groups deserve commendation.

Ladies and Gentlemen, as I come nearer to end, let me briefly take you inside the organization that C-DAC is. We are a highly networked organisation in every sense of the word. This age of network economy demands that we are fully interconnected on the Net, and that is what we are among all our geographical locations. The members are networked too through free and frank communication, peer reviews, teamwork and above all mutual caring and sharing.

We are 475 plus member organisation; a very young organisation though, with an average age of 27. This is our greatest asset and it fully gels with the popular saying that an organisation is as good as its members are. I personally feel very fortunate to have with us very committed and understanding colleagues, through whose hard work alone it has been possible to achieve what I have had the privilege of presenting before you today. I do wish to take this opportunity to congratulate them on their achievements and also thank one and all of them, who have spared long hours away from their families with just one target in front – that we can do it. I look forward to an equally exciting and accomplishing year ahead that will bring further laurels to this great institution that we belong to.

Ladies and Gentlemen, that brings me to the close of the commentary on what C-DAC looked like in the year that is ending five days hence. We have great tasks ahead and as I stated we can do it. I look forward to next year's similar occasion where I could echo even greater accomplishments of my various teams and groups.

Thank you for your support, understanding and love. Thank you once again Ladies and Gentlemen.