Address by Sri E. S. L. Narasimhan, His Excellency the Governor of Andhra Pradesh as Chief Guest at the three-day 2011 Annual IEEE Conference – INDICON 2011, organized by the IEEE Hyderabad Section at the BITS Pilani Hyderabad campus, on 16th December, 2011 at 4.45 p.m.,

The theme of the conference Engineering Sustainable Solutions is indeed time relevant today. Why has this need been felt today is a question that many may raise well exploitation of natural resources, unrestrained growth for human welfare may be said to have commenced with the industrial revolution. Natural resources were considered inexhaustible and environment an infinite sink capable of absorbing all waste discharged into it. However, as years rolled by use have come to realise the limitations cast by several factors. India has 18 per cent of the world population, 24 per cent of
world’s land space, 4 per cent of fresh water and one per cent of the world’s forest cover. Added to this the increase in economic growth is acceleration environmental degradation. Hence, we have come to recognize the need to engineer sustainable solutions. These could be by 1) Restriction consumption, 2) Increasing efficiency, 3) Eliminating waste (changing waste into byproducts), 4) Balancing present needs with future necessities.

While doing so we however need to keep in view social, economic, environmental and cultural issues as sustainability will impinge on each of these. Take the case of energy needs for humans for example from human slaves used to carry out tasks, for draught animals like horse, bullocks etc., to fire by coal, wood, steam, electricity. We are now
talking of renewable energy sources as a means to ensure sustainability.

Sustainability would also be dependent on the stage of development. The underdeveloped, developing and developed societies have degrees of absorption capability. Added to this is the cultural diversity issue. So all these need to be factored in engineering sustainable solution what we need to do is convert constraints into opportunities. In the Indian context we also need to factor in the population spread viz., density, urban and rural. Of course consumption without waste generation is a near impossible concept. After all Phala (fruit) becomes Mala (human waste). Technology as a means to ensure sustainability needs no emphasis. Technology had a decisive effect on the life on the planet and responsible for
transformational changes continually. This change has been quite pronounced in the last few decades or so. Today our life is enmeshed with products of technology – specially electronic and computational and it is difficult to imagine the everyday life without the fruits of technology. As members of humanity we owe a great debt to the seminal minds who have made this possible. Today we have moved from Mega to Giga to Terra, at the one end of the spectrum and Nano at the other end.

More importantly technology has been a converging and unifying force. The penetration of technology has made the world a global village.

The solutions to the many daunting challenges are seemingly within our grasp and still eluding us. This is despite the
impressive arsenal of technological tools continually being added on. Nano technology and bio technology specially hold out great promise to usher greater equity as well as relief. I am sanguine we will be able to witness in our life time the solutions eagerly sought in the realms of food production, disease control and energy, considering the most felicitous and driven minds are engaged.

The information technology and computational theory are essentially the enablers of this change. We owe a great debt to the likes of Alan Turing who had heralded a new dawn through his seminal work on computational theory and universal computing machine. Von Neurman had taken this idea forward to its logical conclusion!
I have great pleasure to wish for fruitful deliberation during INDICON 2011. The camaraderie and fellowship renewed here during your lovely and pleasant stay are as important as your own endeavours for advancement of knowledge in your chosen areas. I thank the Committee of hosts for having chosen me as the chief guest and I am deeply honoured to be among you.

I have great pleasure to declare the INDICON 2011 open.

JAI HIND.

May God bless you.
Areas where technology needs to be focused for the decade ahead are computing, communications, power and energy, to name a few. But all technologies have a positive and negative side which should not be lost of. There are also limitations to growth. The only growth area which is limitless is information or knowledge. This should be our focus area. We also need to focus on technologies to enhance the quality of human life particularly in the field of health care. So also in the areas of food security and education, energy security, the core areas technology has a major role to play. The responsibility of providing and utilizing technology is not limited to a segment. It is public private, national and global. At the same time we need to keep in view rapid obsolescence in technology. We need to move from the conventional to the non-
conventional in our Ernest to ensure sustainability. I would like to conclude with the axiom that whatever we may undertake, or achieve it should be from Hubris to Humility, Hubris or pride while achieving and humility in implementation and sustaining. And ethical values can never be lost sight of. As propounded by Chanakya:-