

Prime Minister Atal Bihari Vajpayee's Inaugural Address at the Indian Science Congress

After the dawn of the new century, the first major public function that Prime Minister Atal Bihari Vajpayee participated was at the first session of the Indian Science Congress at Pune, on 3 January 2000. After extending his hearty greetings to all the participants at this major scientific meeting, he said that the aspirations of tomorrow of a nation are crying out to the agenda of tomorrow. Referring to making our computers Y2K OK, he posed the query, 'Our computers are ready for the new century, but are we? Will the old world order, with all its well-known problems and deficiencies, continue into the new century? How can we build a new world order that is better and happier for everybody?'. What follow are some excerpts from the rest of his address.

These questions await answers not only from leaders of governments, politicians and intellectuals, but also from scientists. After all, science and technology were one of the most powerful forces that shaped the content and the course of the 20th century. The honour of being chosen as 'The Person of the Century', by a reputed international magazine, had indeed gone to a scientist – Albert Einstein.

Humanity, therefore, is making a pressing demand on science and technology. The world is not merely looking for new knowledge and new products in the new century. It is especially looking for such knowledge and such products that will reduce human misery, remove hunger and want from our planet, improve the living conditions for all the people in all the countries – and do all this while protecting the environment, our precious planetary inheritance.

In the century that has just ended, science gained the knowledge of the dance of galaxies in outer space, as also the dance of micro-particles in the womb of the atom. While continuing with this search for the mysteries of the material world, science should simultaneously redouble its quest for those as-yet-unknown ways leading to human happiness for all in the new century.

Achievement of this lofty objective calls for a greater integration of scientists and technologists in formulating policies, as well as in their implementation, both nationally and internationally. So far, science and technology have reached the people indirectly through the intermediation of the industry and the market forces. They now have to be made critical inputs in decision making in society, economy, and governance.

The new century, thus, needs a new mindset. These days, there is a lot of

excitement about the revolutionary phenomenon of technological convergence – namely, the coming together of computers, telecom, television, and electronics on a common digital principle. It seems to me that the world equally needs convergence of a different kind – the convergence of minds and objectives.

No longer can market forces be driven by objectives that are different from the demands made by the people from the governments they have elected. No longer can governments deliver the goods without using science and technology intelligently. Similarly, no longer can scientists and technologists pursue their objectives without harmonizing them with the needs of the market and the people.

It is this growing interdependence between science, technology, industry, business, society, government, and the environment that seems to me to be the hallmark of the new century.

Unlike in previous centuries, no country, however developed, can ensure further progress of science and technology on the strength of its own human and financial resources. Indeed, experience of the past few decades has shown that cooperation itself has become one of the most valuable resources in the progress of science.

Distinguished scientists, I dream to see an India that is a contributor and a beneficiary in equal measure, in this new interdependent and cooperative phase of human history. It is a dream to see India as a highly developed nation in the early decades of the new century – developed socially, economically, culturally, and also in science and technology. It is a dream shared by all Indians – young or old, rich or poor, urban or rural.

I would like to see a far greater and far

more result-oriented deployment of science and technology in areas where they are most needed – primary healthcare, sanitation, agriculture, water and soil management, energy conservation, and efficient services that make the life of the common man comfortable. The country needs your valuable inputs especially in those sectors of the economy, such as small industries, agro-processing, handicrafts and artisanry, which are essential for achieving our triple national objectives: employment generation, equitable wealth creation, and social justice. We must not forget that most of our craftsmen and artisans belong to Scheduled Castes, Tribes, and other disadvantaged groups.

Disaster management, including early forecasting and prevention of natural disasters, is another area that needs increased attention of our scientists. The devastation and human misery caused by the recent supercyclone in Orissa has once again sharply highlighted this need.

India, of all the developing countries, is well placed to design such an indigenous technological mix. We have a long and strong scientific tradition dating back to ancient and medieval times. After independence, we have vastly enhanced our strength in many areas of science and technology. The country is proud of you for your contributions in agriculture, medicine, metallurgy, space, and nuclear sciences, to name a few areas. We have a new and promising crop of young scientists, including those who are working abroad. All this gives me confidence that Indian science and technology have the potential for a big leap forward in the new century.

We have now entered a new era of knowledge capital where generation, dissemination, and use of knowledge has

become the key determinant of wealth creation. Knowledge capital is what will increasingly drive the wheels of the national and global economy and eventually determine the prestige and position of any country in the comity of nations. India is determined not only to be a participant in the IT Revolution, but also to be in its vanguard.

India's successes in IT are already well known. We now must aim to replicate them in all areas of science, technology, and enterprise. The Government would welcome your ideas on how we can create world-class facilities and conditions in India for world-class achievements.

A number of important measures are needed to translate the vast potential of Indian science into winning performance. As we embark on a new voyage for Indian science in the new century, the broad vision I commend to all of you is: 'Developed Indian Science for India's Accelerated and All-Round Development'. This vision mandates that we together pledge to accomplish some urgent tasks:

- Let us pledge to further improve the standard of science education at all

levels. Let us especially turn our attention to our children and facilitate their natural creative energies to develop into top-class capabilities when they grow up. While sustained public funding for primary and secondary education is a necessity – indeed, it is an obligation – we need to open new avenues for private sector support for higher and technical education.

- Let us pledge to increase collaboration between our universities, industry and R&D institutions, including defense R&D. By world standards, India's investments in R&D are wholly inadequate and sub-critical. I would like to see a hike in investments in R&D from the present 0.86% of the GDP to 1% this year, and to be further increased to 2% over the next five years. Apart from increasing financial investments, we should increase the synergy among our existing institutions and assets, with the aim of making India a global R&D platform.
- Let us pledge to strengthen our S&T institutions through competent and inspiring leadership – both scientific and administrative.

- Let us pledge to promote India's considerable wealth of traditional knowledge by bringing it into the mainstream of our national S&T establishment.
- Let us pledge to fully benefit from the new Intellectual Property Rights regime that is now evolving worldwide.
- Let us pledge to spread the culture of Venture Capital and other forms of support for the new knowledge-driven enterprises in India.
- Let us pledge to nurture an atmosphere of innovation, adventure, high ambition, and high achievement in every area of Indian science.

As we enter the new century, I recall to you the stirring words of the first Prime Minister of India, Pandit Jawaharlal Nehru, who said: 'Scientists are a minority in league with the future'.

We have set for ourselves to make the 21st Century India's Century – *Ikkeesvin Shatabdi, Bharat ki Shatabdi*. It is also essential for the realization of an even higher goal: To achieve peace, progress, and happiness for the entire humanity in the new century.

Aatre succeeds Kalam as DRDO chief

Vasudeva K. Aatre succeeds A. P. J. Abdul Kalam as Scientific Adviser to the 'Raksha Mantri' and Director General of DRDO. Born in 1939 at Bangalore, Aatre received his BE in electrical engineering from University of Mysore in 1961 and ME (Electrical) degree from the Indian Institute of Science in 1963.

Awarded the Ph D by Waterloo University in 1967, Aatre worked at the National Research Council of Canada as Research Fellow. He later joined the Technical University of Nova Scotia in

Halifax, Canada, rising to become Professor of Electrical Engineering there. He returned to join DRDO's Naval and Physical Oceanographic Laboratory, Cochin in 1980 and became its Director in 1984.

Aatre is a Fellow of the National Academy of Engineering, the IETE, the Acoustic Society of India and the Ultrasonic Society of India, and is a Senior Member of IEEE. He has to his credit several national awards including DRDO Scientist of the Year Award (1986), Vasvik Award for Electronic Sciences

and Technology (1990), IETE Ram Lal Wadhwa Gold Medal for Electronics and Telecommunication (1993), and DRDO Technology Leadership Award (1998).

Aatre inherits India's largest and most-lavishly funded R&D organization at a time of transitions in a post-nuclear, post-Kargil, strategic environment, with an ageing DRDO scientific cadre, and a declining interest in young people to opt for hard science and engineering as career options.