

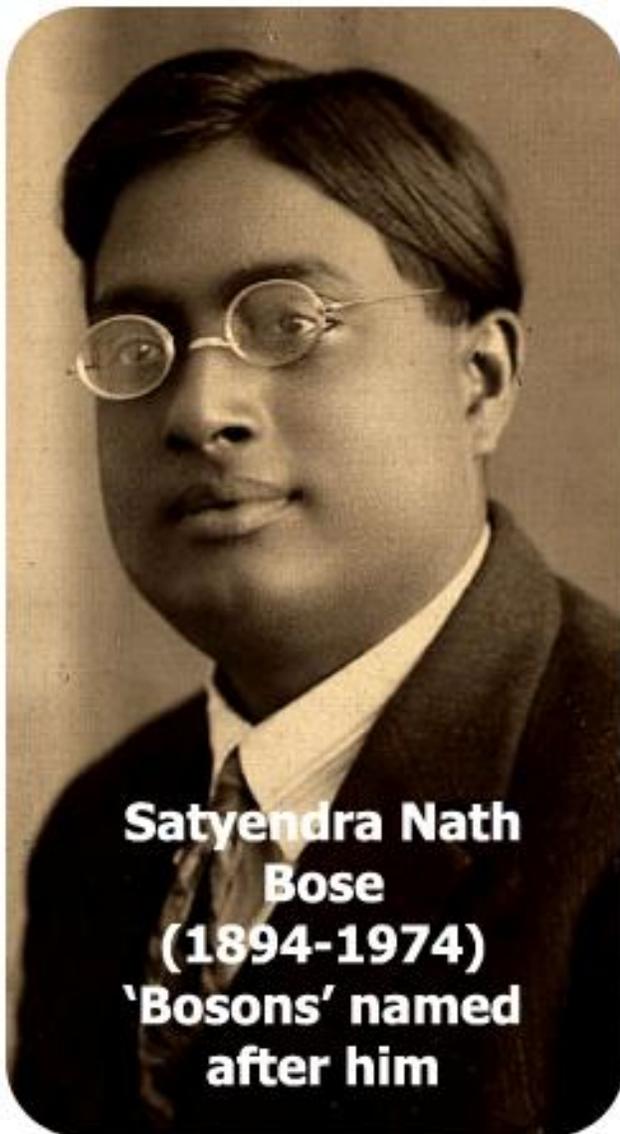
PR SENSE

Spreading positive vibrations

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Man of the month



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From the desk of Editor-in-Chief

Editorial Team is extremely grateful to the readers for the continued support and feedback. In this July 2012 edition, we



are bringing the scientific information in a simple manner for the benefit of our readers. Recently on 4th July 2012, global scientists announced the detection of 'Higgs Boson', which is otherwise known as 'God Particle'. We bring out the facts behind the God Particle. Editorial Team is thankful to Prof. Dr R Jagannathan, a well known Senior Indian Physicist for the simplified inputs.

In July 1969, American astronaut landed on the Moon. In the historical section, we are tracing the history of 'Space Race'

between the two Super Powers of the world. Also as usual we feature two persons under 'Ignited Minds' Section.

Recent announcement of Anna Hazare to form a political party has triggered much controversy in India. In the 'Controversy' Section, we are analysing the impact of such announcement.

We are confident that our readers will enjoy this ezine as usual. Please send us your feedback for improvement. We wish all the readers a very Happy Independence Day.

K. Srinivasan

The forgotten Indian scientist behind 'God particle'

When CERN (European Organisation for Nuclear Research) Scientists were celebrating the discovery of 'Higgs Boson' (God particle) at Geneva on 4th July 2012, the name of Shri Sayendra Nath Bose, after whom the 'Boson' has been named, virtually remained in oblivion. Even the Indian and global media hailed only Peter Higgs, the British Physicist who predicted the existence of such particle in early 1960.

PreSense is greatly honoured and privileged to carry his photo on the cover, as "Man of the month".

Satyendra Nath Bose (1894 – 1974) worked with Albert Einstein to work out the Bose-Einstein statistics and the theory of Bose-Einstein condensate in the 1920s. Bose was a natural candidate for a Nobel Prize which he never got. His work on Quantum Mechanics was highly commendable and hence the Scientists named one category of subatomic particles as 'Bosons'. However, when science's biggest find came, Bose was missing from the limelight, even in India.



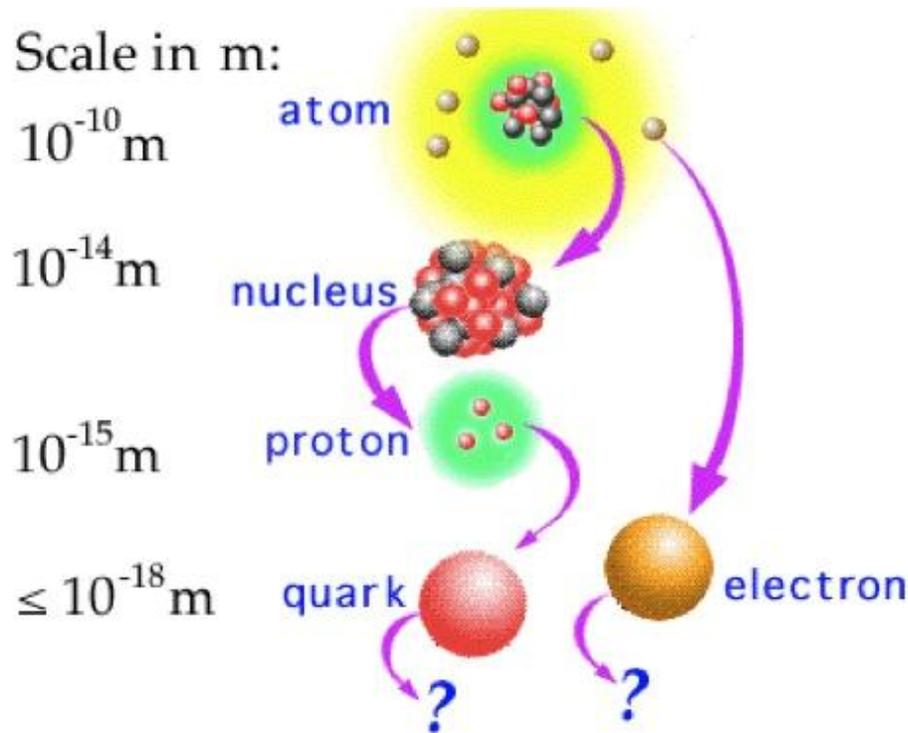
A Fellow of the Royal Society, he was awarded India's second highest civilian award, the Padma Vibhushan in 1954 by the Government of India.

'God Particle' – Exploring the mystery of Universe

On 4th July, 2012 the Scientists identified the 'God Particle' which is responsible for imparting 'mass' (weight) to any particle. We attempt to explain this great scientific achievement in a simple manner.

All the particles, including Universe made up of 6 Quarks only

The whole Universe consists of particles. These particles are made up of 'atoms'. These atoms are of the size '10 billionth part of a meter'. These atoms consist of (1) Nucleus (protons and neutrons) and (2) Electrons. The neutrons and protons are bound together in the nucleus, while the electrons orbit the nucleus in shells according to their energy level.



The protons and neutrons are made up of 'Quarks'. There are 6 types of Quarks. The whole Universe, including particles like pen, phone, TV, table, human beings, animals are made only out of these 6 types of Quarks. Depending on the combination of these 6 types of Quarks, we

get the object like table, pen, man, woman, monkey, donkey, dog, water, rock, etc.

The puzzle of Scientists

Every Quark has 3 basic properties. (1) Space (they occupy a space that is otherwise volume), (2) Charge (+ve, -ve or neutral) and (3) mass (weight). Since all particles are made up of Quarks, every particle has these three properties. The Scientists wanted to identify that particular 'particle' which is responsible for imparting mass to any object. Satyendra Nath Bose, an Indian Scientist from Kolkatta predicted some particles in 1924, jointly with Einstein. (picture) These particles were later named as 'Bosons' by the Scientists.



Meanwhile another Scientist Fermi also identified some particles. These particles are named 'Fermions'. Thus scientists concluded that every particle/body can have a combination of Bosons and Fermions. They predicted and confirmed many particles as Bosons and Fermions.

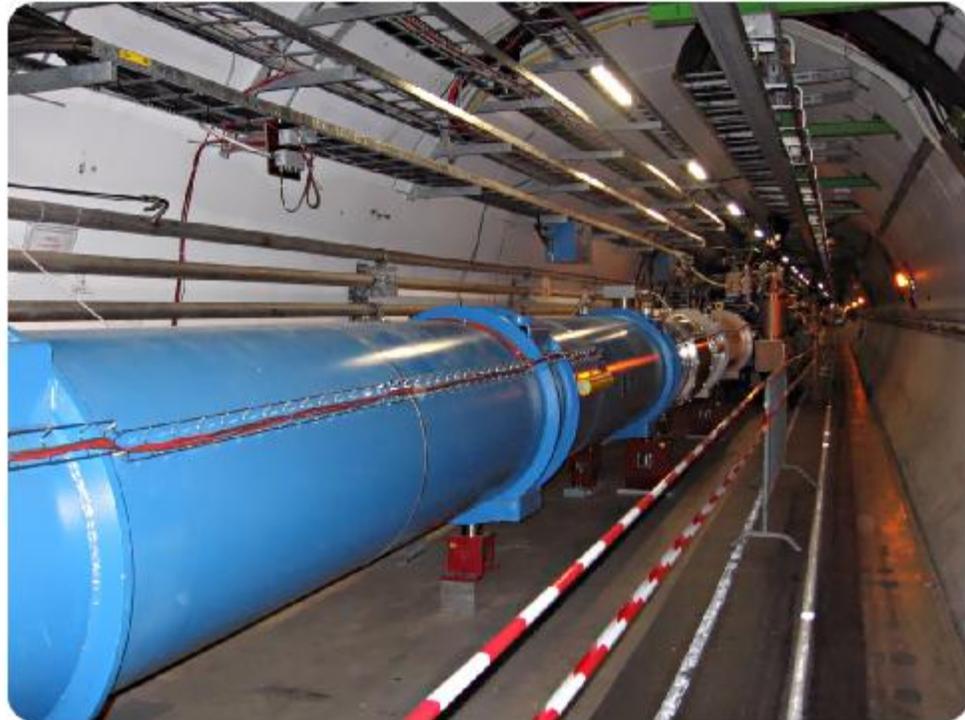
Identification of Higgs Boson

In 1964, Prof. Higgs concluded that out of several Bosons and Fermions, only one 'Boson' was responsible for providing mass to any particle. That particular Boson was later named as '*Higgs-Boson*', which is now called '*God Particle*'.

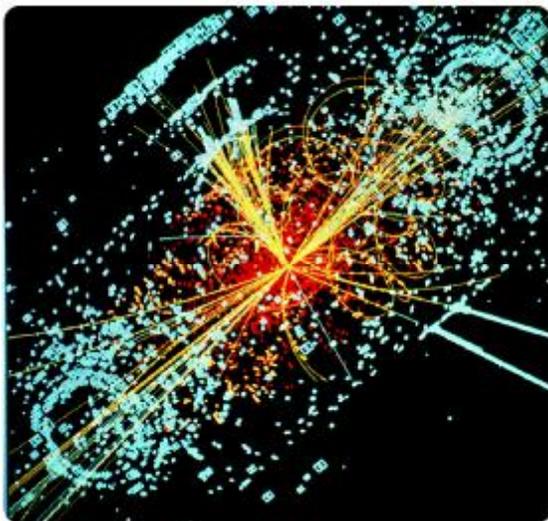
Detecting Higgs-Boson

In order to detect the Higgs-Boson experimentally, a complex experimental facility called Large Hadron Collider (LHC) at CERN (the European Center for Research) was set up at Geneva.

(picture) This facility has a 27 km radius, air-conditioned,



path in which the protons are accelerated. About 8000 physicists and engineers from about 85 countries intensely involving an investment of US \$ 10 bn., do research day and night, by setting up and operating the laboratory and analysing the data emanating from the different experiments which are done there.



Using this LHC, when beams of protons accelerated to about 7 Tev (Trillion electron volt energy) travelling in opposite directions are made to collide, ultra small particles will be created and thrown out. During this process, Scientists believe, Higgs Boson, which is responsible for imparting mass to the Universe, will emerge. (picture)

A human being can fly at speed of light

In a lighter sense, Scientists say that if all the Higgs Bosons are removed from a body of a human being, he will immediately start flying at 3,000,000 km per sec. This signifies the importance of Higgs Boson, which is also known as God Particle.

Though nature is highly mysterious and beyond the scientific exploration, such researches at huge expenditure may help improve the quality of living of the future generation.

Shiva's cosmic dance is the dance of sub-atomic matter



In 2004, a tall statue of the dancing Shiva was unveiled at CERN, the European Center for Research in Particle Physics in Geneva. CERN is Switzerland's pre-eminent center of research into energy, the "world's largest particle physics laboratory" and the place where core technologies of the internet were first conceived. A special plaque below the Shiva statue explains the significance of the metaphor of Shiva's cosmic dance with quotations from Fritjof Capra (73), an American Physicist.

"Modern physics has shown that the rhythm of creation and destruction is not only manifest in the turn of the seasons and in the birth and death of all living creatures, but is also the very essence of inorganic matter and for the modern physicists, then, Shiva's dance is the dance of subatomic matter. Hundreds of

years ago, Indian artists created different forms of visual images of dancing Shiva in a beautiful series of bronzes. In our time, physicists have used the most advanced technology to portray the patterns of the cosmic dance. The metaphor of the cosmic dance thus unifies ancient mythology, religious art and modern physics."

The parallel between Shiva's dance and the dance of subatomic particles was first discussed by Fritjof Capra in an article titled "The Dance of Shiva: The Hindu View of Matter in the light of Modern Physics," published in *Main Currents in Modern Thought* in 1972. Shiva's cosmic dance then became a central metaphor in Capra's international bestseller *The Tao of Physics*, first published in 1975 is still in print with over 40 editions and going strong.

PRince

by- Triambak Sharma

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You should be little fast Man..!!
You proved about **GOD PARTICLE**
now ..which we declared
thousands year back...

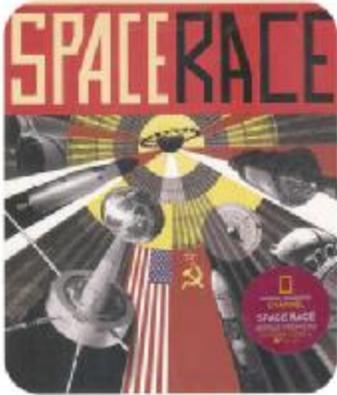


International – Remembering the historic events

Between 1957 and 1975, Soviet and US indulged in Space Race, to excel each other.

On 20th July 1969, a new history was created by mankind by landing on the Moon. Neil Armstrong set his foot on the Moon from America's Spacecraft Apollo 11. Looking back at the history, *PreSense* focuses on the important events in the space mission.

Space Race during Cold War



Between 1957 and 1975, the Cold War rivalry between the two nations Soviet Union (USSR) and United States (US) focused on attaining firsts in space exploration, which were seen as necessary for national security, and symbolic of technological and ideological superiority. The Space Race involved pioneering efforts to launch artificial satellites, sub-orbital and orbital human spaceflight around the Earth, and piloted voyages to the Moon. While Soviet Union was the first to enter the space, United States became the first to land a man on the Moon.

It effectively began with the Soviet launch of the Sputnik 1 artificial satellite on 4th October 1957, and concluded with the co-operative Apollo-Soyuz Test Project human spaceflight mission in July 1975. The Apollo-Soyuz Test Project came to symbolize détente, a partial easing of strained relations between the USSR and the US.

The Space Race had its origins in the missile-based arms race that occurred just after the end of the World War II, when both the Soviet Union and the United States captured advanced German rocket technology and personnel. The Space Race sparked unprecedented increases in spending on education and pure research, which accelerated scientific advancements.

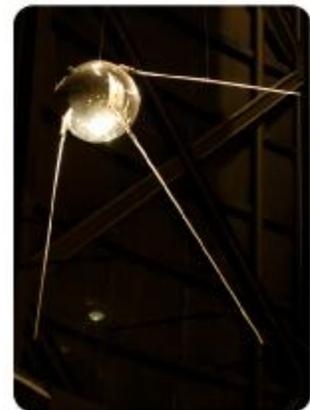
Some famous probes and missions include Sputnik1, Explorer 1, Vostok 1, Mariner 2, Ranger 7, Luna 9, Alouette 1, Apollo 8, and Apollo 11.

Seeding the Space Exploration

In 1952, the International Council of Scientific Unions decided to establish July 1, 1957, to December 31, 1958, as the International Geophysical Year (IGY) because the scientists knew that the cycles of solar activity would be at a high point then. In October 1954, the Council adopted a resolution calling for artificial satellites to be launched during the IGY to map the Earth's surface. In July 1955, the White House announced plans to launch an Earth-orbiting satellite for the IGY and solicited proposals from various Government research agencies to undertake development.

Sputnik (USSR)

The Sputnik 1 rocket (picture) was launched at 19:28:34 UTC, on 4th October 1957. The Sputnik satellite, weighing 83kg (183lb) and only twice the size of a football, could be seen with the naked



eye as it circled the Earth for 22 days. It emitted a signal that could be heard on a household radio. It took about 98 minutes to orbit the Earth on its elliptical path. Successful Launch of Sputnik 1 changed history, by starting the space age and space race between US and USSR.

In addition, the Europeans and Americans feared that the Soviet Union's ability to launch satellites also translated into the capability to launch ballistic missiles that could carry nuclear weapons from Europe to the U.S. Then the Soviets struck again; on November 3, 1957, Sputnik II was launched, carrying a much heavier payload, including a dog named Laika.



Response of US by launching Explorer I

Launch of Sputnik triggered US to grant more funds to compete with USSR. On January 31, 1958, United States successfully launched Explorer I. This satellite discovered the magnetic radiation belts around the Earth, named after Principal Investigator, James Van Allen.



Launch of NASA by US

The Sputnik launch also led directly to the creation of National Aeronautics and Space Administration (NASA) on 1st October, 1958.

First person to orbit the earth (USSR)

Soviet was achieving more success in space mission, due to intense rivalry of US. These included sending the first man into space, Yuri Gagarin, and carrying out the first spacewalk. On 12 April 1961, the Soviets launched Yuri Gagarin into orbit around the Earth on Vostok 1 spacecraft. Yuri Gagarin was in space for 1 hour and 48 minutes. (See picture on

left)

Historic speech of Kennedy (US)

In an historic speech on 25th May 1961, President John F Kennedy announced an ambitious space exploration programme in the Joint Session of the Congress. This included putting a man on the moon before the end of the decade. (picture on right).



First space ship to land on moon (USSR)

On February 3, 1966, Luna 9 spacecraft was the first spacecraft to achieve a soft landing on the Moon, or any planetary body other than Earth, and to transmit photographs.



Apollo 11 – Man on the Moon (US)

On 16th July 1969, Apollo 11 with 3 Astronauts Neil Armstrong, Michael Collins, and Edwin E. Aldrin Jr was launched. After entering the lunar orbit, Armstrong and Aldrin were transferred to Lunar Module (LM) named 'Eagle'. Eagle landed on the Moon's Sea of Tranquility at 4:17 pm EDT, 20th July, 1969. The first humans on the Moon waited for six hours before they ventured out of their craft. At 10:56:15 pm EDT, Armstrong became the first human to set foot on the Moon.

The first step was witnessed by at least 500 million TV viewers on Earth. His first words when he stepped off the LM's landing pad were, "That's one small step for a man, one giant leap for mankind." Aldrin joined him on the Moon's surface almost 20 minutes later. Together, they spent just under two and one-quarter hours outside their craft. Apollo 11 safely blasted out of Moon orbit on its way back to a splashdown in the Pacific Ocean on 24 July 1969.

Thus, US kept up their commitment of landing on the moon before the end of the decade with 161 days to spare and won the race to the Moon.

Apollo Soyuz Test project ended the Space Race

Marking the end of Cold War between the two super powers, in July 1975, the first Joint US-Soviet space flight US-USSR Apollo Soyuz Test Project (ASTP) was launched.

Astronaut Thomas P. Stafford (in foreground – see picture) and cosmonaut Aleksei A. Leonov made their historic handshake in space on July 17, 1975 in Earth orbit. The American and Soviet spacecrafts were joined together in space for approximately 47 hours on July 17th, 18th, 19th, 1975.



Watch this podcast on 'Space Race' by USSR and US with rare audio and visual clippings.

<http://www.youtube.com/watch?v=QJVjNKdl tJw>

Ignited minds – silent achievers

Deepali converted the challenges into opportunities to become beauty queen of Asia

While everybody is holding a view that only slim girls can become 'Beauty Queens', Pune based Deepali Phadnis has proved otherwise. A tall slim girl Deepali, right from school days, was nurturing the dream of becoming 'Miss India'. Being a girl from a middle class, she could not contest due to her priorities of education. To add to her woes, she met with an accident in 2006 resulting in ligament injury with four major fractures. She was bed ridden for six months, which resulted in increase of 25 Kg to her weight.



She did not lose hope. Her family members and her lover Devadatta Mahapatra encouraged her to reduce her weight to compete as a beauty queen. It took nearly 4 years for her to shed this additional weight. Meanwhile in 2009 she got married to Devadatta Mahapatra, who encouraged her to contest Mrs India title.

In 2011, she won the Mrs India International - Chennai title and in 2012 she became Mrs Asia International. Recently, in July 2012, she contested for Mrs International title, held at Chicago (US) which she lost marginally. However she is hopeful of bagging Mrs International in 2013.

In an exclusive interview to PreSense, she said that beauty was not in glamour, but dependent on many aspects, including health, family values, etc.

As Mrs Asia International title holder, she wants to campaign to create awareness about 'Diabetes', which is one of the dangerous diseases in India. She says that she lost her father due to diabetes and her grand father's legs were amputated because of this. Though, she is required to campaign only for one year, she wants to continue for ever sincerely.

Anna Hazare and Kiran Bedi have inspired her. Sushmita Sen is her role model for beauty pageants. She is working as a Software Engineer in a Multinational Company. She is also a popular Odissi dancer.

"I want myself to be validated at International level. I will brave all challenges to achieve", concluded Mrs Deepali with beaming confidence.

She can be reached at sendyouremail2me@gmail.com .

Ignited minds – silent achievers

Anuradha and Dhimant Parekh - the faces behind 'The Better India'

Anuradha and Dhimant Parekh are a Bangalore-based couple and founders of the website, www.thebetterindia.com, which features “positive news, happy stories, unsung heroes”. It reports good deeds that happen in the country and showcase them to the world. It also covers the developments and happenings on the social and economic fronts in the country. The founders hope that these reports would inspire at least one amongst the readers to do something that makes an impact, be it big or small.

Anuradha and Dhimant are professionals by qualification. After a short career stint, Anuradha now runs The Better India on a full-time basis. Dhimant is a full-time working professional and also an author of a book (available at www.sketchstories.com). He supports Anuradha in running The Better India.



When Anuradha and Dhimant were busy with their respective careers, somewhere along the way, they felt an urgent need for positive journalism in the country. Mainstream newspapers did not seem to cover positive news in sufficient measure, and while it was important to point out what was wrong, they believed that it was equally important to point out what was right. This conviction ignited their decision to start an online news agency, www.thebetterindia.com.

The Better India (TBI) started off with the 2-member team, as the founders covered positive stories on their own. Over time, they got more people to join the cause and TBI now has a vast network of freelancing journalists and partner organisations. Anuradha and Dhimant continue as the founders and co-editors of the website.

The website continues to progress in spite of challenges. According to Anuradha and Dhimant, the biggest challenge initially was sourcing positive news. With more like-minded people joining them, this challenge is coped with, successfully. The challenge of earning sufficient revenues to sustain the activity continues. In the face of this, breaking-even in terms of costs is a note-worthy achievement by the team.

The Better India was awarded South Asia's prestigious Manthan Award for its initiative. Behind all this, Anuradha and Dhimant Parekh look on with pride, joy and sustained inspiration to do more in this direction.



National – Controversy

Has Team Anna exploited the mood of the nation wrongly?

In April 2011, when Anna Hazare started his India Against Corruption (IAC) movement in Delhi to end corruption in India, the entire country stood behind him, thanks to the



extensive coverage by TV channels. Even the Government of India had to bow down fearing mass backlash. During that time, Team Anna started spreading a message as if all the politicians were corrupt and bad. There were occasions that even genuine politicians who attended their meetings were boo-boomed by the volunteers of Team Anna.

Again in August 2011, when Anna Hazare started his 'indefinite fast', the mishandling of the event by the Government, brought more supporters to the movement. Not so popular Anna Hazare was projected by the Media as a 'Hero'. Team Anna started comparing Anna Hazare with Mahatma Gandhi and described the anti-corruption movement as the 'Second Freedom struggle', ignoring the great sacrifices made by Lok Nayak Jayaprakash Narayan in 1970s to restore democracy. As against the earlier stand taken during April 2011, this time, they invited all the political parties on their stage. Due to the media hype, even the Parliament was forced to sit late to discuss 'Jan Lokpal' bill.

Because of the social media and charged youngsters, IAC movement gained popularity. Unfortunately, Team Anna did not reach the grass root villages. It was mostly confined to major metros, that too only within the middle class IT professionals.

There were lots of criticisms about the inconsistent policies of Team Anna and the

core committee members. Opinions were going round even among the IAC members that Anna Hazare was more misused by some of the core team members, towards their selfish ends.

When Anna Hazare started his protest fast again in July 2012, he started with the demand of instituting a Special Investigation Team (SIT) against 15 Cabinet Members. After two days, he shifted his stand to Jan Lok Pal, for inexplicable reasons. Team Anna could not attract the crowd across the nation this time. Probably as an 'exit route', they announced ending the fast by announcing that they would convert IAC into a political party.

The announcement of IAC becoming a political party has triggered controversy even among their own members across the nation. There were differences of opinion among the core team members. General Public who supported Team Anna feel cheated by this announcement. They started thinking that the mood of the nation against the corruption was exploited by few of the self-centered Team Anna Members to satisfy their personal political ambitions.

Instead of making announcement from the stage of Delhi, Anna Hazare should have spent at least one year in touring the entire country, like Mahatma Gandhi did before entering the freedom movement. He should have interacted with the people across the nation and should have done a good homework, to take the 'Anti corruption movement' to the next level, with the support of the people.

Now, the unilateral decision of Anna Hazare and his coterie have created a situation that in future people will look at any 'Anti corruption movement' with suspicion.

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