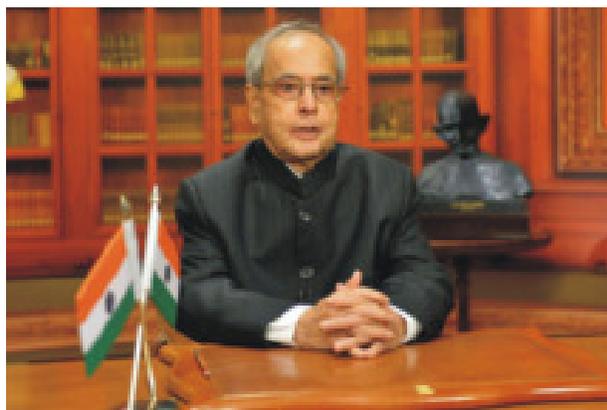


Innovation – A Way of Life

□ Shri Pranav Mukharjee

Vice Chancellors of central universities, Directors of IITs, NITs, IISc/ IISERs, SPAs, IIITs, NIPERs; Heads of other institutes and civil service academies; Faculty members; Officer trainees of various civil services; My dear students:



Shri Pranav Mukharjee

I am glad at this opportunity to interact with you at the beginning of the new academic session. At the start, let me welcome all the students who are new to universities and other centres of higher learning. Also, my compliments to the officer trainees who are undergoing their probationary training at their designated academies. I started the practice of addressing the academic community in higher education in January 2014. This is the sixth such occasion and I must confess that I eagerly look forward to this periodic interface on e-platform. For making me connect with you all, I thank the National Knowledge Network and the National Informatics Centre teams.

India is the world's largest youth-populated nation. Over 600 million people in India out of a total population of 1.28 billion are below the age of 25 years. We have an abundance of creative, restless

and inquisitive minds. In the networked environment of today, we need the power of youth to realize the full potential of an aspirational India. For this, *creative thinking and a desire for innovation must become a part of our day-to-day lives*. So, I have chosen to speak to you on "Innovation: A Way of Life", today.

Friends, India's economic performance over the last few decades has been commendable. Yet, we are confronted with enormous problems of poverty, inequality, unemployment, resource scarcity, and poor infrastructure. While we need cutting edge technologies for rapid creation of world-class infrastructure and its maintenance, we also need solutions for including the excluded ones in the development process. As the democratic aspirations rise, we have to find new ways of reducing disparities. Many times, we cannot solve the problems by merely redoubling our efforts. We need to change the approach, the design, the delivery method and the means. On account of our size, diversity and complexity, our circumstances are unique. Adopting global models for development can at best be of limited use. Our development model has to be linked to the aspirations of our people and must respond to their needs. Innovations must preserve our diversity and benefit the wider spectrum of the society.

Friends, Innovation has many facets. Some innovations are *transformational* in nature where the changes are disruptive. The digital revolution with its products impacting the daily lives of millions – from top to the

bottom of the socio-economic pyramid - is one such example. Then there are '*pro-inclusive*' innovations that by modifying an existing technology significantly lower the price of a product or a service making it affordable to middle and lower income groups. It includes '*frugal*' innovations that retain only the core functionalities of a product like a low-cost car or a low-cost airline. Another category is *social innovations* that are primarily aimed at providing socially useful

“creative thinking and a desire for innovation must become a part of our day-to-day lives”

services for which clients may not have the capacity to pay. Yet another dimension of innovation is 'grassroots' innovation that is undertaken by local communities who close the gap between unmet social needs and inadequate delivery system by developing creative solutions themselves.

Friends, today I want to share with you some lessons that we have learned over the last four years through a variety of initiatives taken in the Rashtrapati Bhavan. I will also outline the challenges that confront us in making India more compassionate and collaborative to meet the social needs. I am happy that Prime Minister in his recent *Mann ki Baat* has exhorted countrymen to create an innovation eco-system. He talked about a very positive initiative Atal Innovation Mission, to promote innovations and start-ups all over the country. I agree completely with his message of AIMing to lead through Innovations. The idea of unleashing creativity of children is also the right one.

The idea of imagination, experimentation, innovation and entrepreneurship (IEIE) has to be instilled from childhood. I am told that Department of Science and Technology is starting a programme: MANAK (Million Minds Augmenting National Aspirations and Knowledge) with NIF's support to find at least two innovative ideas from each of the half a million schools and take the worthy ones forward.

Friends, the next question is how do we take the inclusive innovation movement forward? India may have lagged behind in some of high tech innovations but when it comes to developing solutions to everyday problems, we have made a difference. I have been hosting innovation scholars besides writers and artists as my guests at Rashtrapati Bhavan for the last three years under an in-residence programme where innovative minds come together to "recharge their creative batteries". I will call upon educationists, corporate leaders and community leaders to think of extending such recognition to creative and innovative people of our country. No matter how busy you are, find some time in a year for such people for igniting your imagination.

To celebrate the spirit of common people to take charge of developmental destiny through their own creativity and innovation, Rashtrapati Bhavan has been hosting a week-long Festival of Innovation. In this festival, global roundtables and other interactive sessions provide

innovators, entrepreneurs and financiers a platform for conversion of ideas into marketable products.

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In my capacity as the Visitor of 117 central institutes of higher learning, I had given a call to these institutes to set up innovation clubs. There are now over 85 such clubs, innovation incubators and hubs in central institutions of higher learning.

On 19th May, 2016, Rashtrapati Bhavan became a smart township. For us, a smart township means a humane, hi-tech, heritage and happy township which ensures an enhanced quality of life that contributes to the well-being of its residents. I think our smart cities, towns and villages, as we develop them, too must be humane, hi-tech and happy leading to the creation of a technology-driven but compassionate society.

Friends: I hope to see a developed India in my lifetime. Our collective dream will be fulfilled only when we build upon creative ideas of all citizens, by providing them pathway to persevere, sustain, and make a difference.

I suggest nine SUTRAS to invigorate India's march towards a more inclusive, diverse, sustainable and innovative society:

1. We should not snub children when they ask questions to which we have no answer. We should admit our ignorance, seek relevant information from those who may know and whet their curiosity. Unless our children learn to question, experiment, their imagination will not expand; and their innovative potential will not be realized.
2. We should promote and reinforce a scientific temper by questioning our beliefs which are not compatible with scientific way of thinking. The futuristic societies build upon unconventional ideas. They are not afraid of failures; they take risks and forgive well intentioned mistakes.
3. Innovation clubs and tinkering labs should be set up in schools, colleges and research institutions. Youth must learn to *search, spread, and celebrate* inclusive innovations and *sense the unmet social needs* of communities in their hinterland. I have seen paddy transplantation in my village when women work with their feet in water, back bent in painful posture for hours transplanting paddy. Why cannot we improve and design affordable manual paddy transplanter? Why

the pace of technological change is slow in the activities that women undertake? Let us commit ourselves to work towards addressing all these problems in a time bound manner. We should also become sensitive towards the problems faced by working class, elderly, and specially-abled, of our country. Only then will compassionate creativity blossom.

4. We should build viable and *sustainable bridges between formal and informal knowledge systems*. With climate change risks, and uncertainty looming large on the horizon, the knowledge of the communities which have lived with these uncertainties for millennia cannot be ignored. As resources become scarce, we will have to learn to share more and more. The value system which promotes public and common good over individual interest should power individual entrepreneurship.
5. We must give due recognition to cultural, technological and traditional skills while implementing our employment guarantee schemes and skill development programmes. *Nobody is, truly speaking, unskilled*. A knowledge society has to harness unique strengths of each person. We should also encourage artists, performers, sculptors, etc., to

teach their art to our children in schools, and nurture younger generation which may like to contribute towards *cultural economy*.

6. I have been interacting with vice chancellors and directors of various institutions of higher learning during the last four years. I have impressed upon them to promote innovation in every subset of education so that younger generation grows with a creative and problem solving mindset. We should bring our educational system in line with contemporary societal expectations.
7. There are many simple problems that we face in our daily life but we learn to live with these problems rather than find systematic solutions. We need to overcome the deeply-embedded inertia in our psyche and constantly ask ourselves: how can I solve this problem? Can I still try, no matter if I fail a few times?
8. We must develop a sense of immediacy. Time and tide waits for none. In a fiercely competitive environment, to be in a hurry and have some impatience is a necessary virtue.
9. We must not tolerate inefficiency, shabbiness and poor quality work. Our endeavor should be to achieve high standards of aesthetics and performance while providing goods and services.

Nine Sutra to Invigorate India's March towards Innovative Society

1. Do not snub children when they ask questions.
2. Promote and re-inforce scientific temper.
3. Set up Innovation clubs in schools and colleges.
4. Build bridge between formal and Informal knowledge system.
5. Give recognition to cultural, technological and traditional system.
6. Promote innovation in every subset of education.
7. Find systemic solution to daily life problems.
8. Develop a sense of immediacy.
9. Endeavour to achieve high standards of aesthetics performance.

There is a lot more that can be and should be done. I will be happy to hear from you about the ideas you have for making India a creative, compassionate, collaborative and innovative society. Our government wants to use your ideas constructively. The knowledge and culturally rich but economically poor deserve our support for a more dignified future. If we overcome some of our inertia, stop complaining always about what is wrong around us and instead focus on what is right, bright and creative, we can indeed change our work culture and the mindset. Great nations need to reinvent their social mores, and redefine social aspirations to include the last in the line.

I wish you a very healthy, happy and successful future. Stay engaged with creative and compassionate forces in our society. That's how India will become not only a developed but also a caring and sharing society. Thank you. Jai Hind. □□

Note: *This is the text of one of the speech delivered by the former President of India Shri Pranab Mukharjee while addressing the Vice Chancellors and Directors of Central Universities, IITs, NITs and IIITs, etc. In the interest of the people of India, it has been thankfully acknowledged from the website of the President of India.*

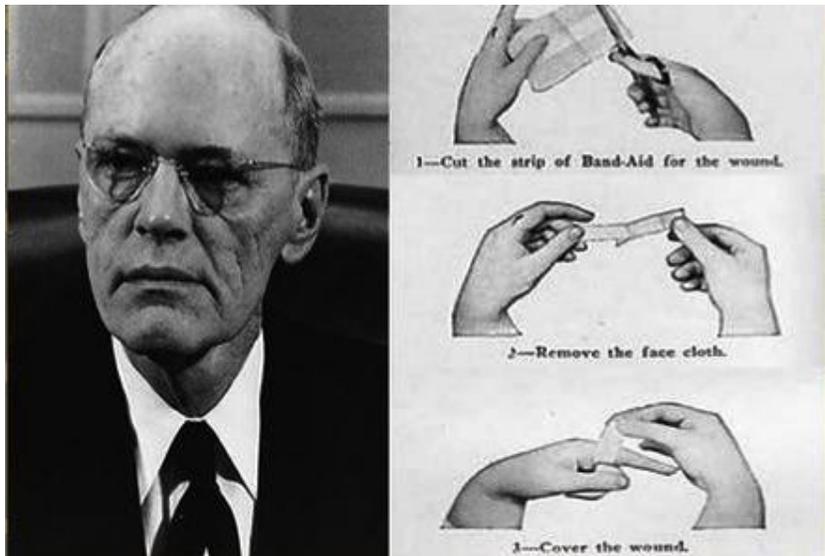
BAND AID

An Innovation Evolved from a Love Story

Band aid is today an essential component of every first aid box. But, do you know that merely 10 years ago there was no band aid. Even for the dressing of very minor injuries, a person had to wait for an assistant. As told by Vigyan Ratna Laxman Prasad to Mr. R.S. Dass, there is an interesting story behind it. He told that the band aid evolved as the part of a love story of a newly-wed couple of a lower middle-class family.

Early Dickson was a cotton supplier to medical giant Johnson and Johnson. When Earle got married, his beautiful wife Josephine used to keep herself busy in household chores to turn her home into heaven and in that effort usually suffered with cuts, bruises and burns on almost daily basis. In the evening when her husband would return, he would apply medicine and dress the injury, because for any dressing normally both hands are required. During his absence, it would have been difficult to do dressing of her cuts and wounds herself. This worried Earle a lot. He started thinking of ways and means through which his dear Josephine may dress up her wounds single handedly on her own. This was an idea to find solution to a problem. He performed experiments and finally prepared band-aid.

For preparing band aid Earle spread surgical tape on the table, cut and pasted square pieces of cotton-gauge at regular intervals on it. Further, he secured the tape with cotton strips so that it may easily stick to the skin and may also be removed with ease when injury is cured. This proved to be so helpful that he showed his aid to his boss. The astute businessman was quick enough to perceive the business prospects for the invention and started its production in 1920 with the brand name Band Aid.



Early Dickson

The sale of band aid steadily increased and it got popularized as a first aid device the world over. Earle Dickson also rose in position on the staff of Johnson and Johnson as the sale of band aid increased and got retired as its Vice President in 1957. It is important to mention that the Band Aid is still the highest earning product of Johnson and Johnson and the company is improving it as per market requirements.

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“The five essential entrepreneurial skills for success: Concentration, Discrimination, Organization, Innovation and Communication”

—Harold S. Geneen