PAN-IIT Conference - Speech by Admiral (Retd) Nirmal Verma, High Commissioner of India to Canada on 06.06.2014

Honourable Minister Jason Kenny, Minister of Employment and Social Development and Minister for Multiculturalism, Khaliq Zaman, President, IIT Alumni Canada, Srinivas Ventakesh, Chair PAN-IIT 2014 Organising Committee, Director and Deans of Indian Institute of Technology who have come all the way from India to participate in this event, **IIT-ians**- I wish I had earned the entitlement to prefix Fellow before IIT-ians; Ladies and Gentlemen....

2.   At the outset I would like to thank PAN-IIT council for giving me the opportunity to address this conference.   For me this occasion marks two highpoints. Firstly, I have never been in any gathering that can claim to have so many "grey-cells" under one roof. Secondly it is a privilege to share the dais with Honourable Jason Kenny, a five time Member of Parliament and now Minister of Employment and Social Development and Minister of Multiculturalism - a very loaded portfolio to say the least - whether for preparing young Canadians to face the future confidently, or building on the inclusiveness that is the hallmark of Canadian society.

3.   In my 18 months as India's High Commissioner I have watched Minister Kenny participate in many functions, and I have marvelled at his ability to connect with Canada's diverse communities. In a lighter vein he sometimes refers to his portfolio as "Minister of Curry", and his constituents add that he is always "in a hurry". It is therefore not at all surprising that Mr. Kenny has been voted "best overall" and "hardest working" Member of Parliament by his colleagues in Maclean's Magazine's annual survey of parliamentarians.

 4.   An occasion such as this gives an opportunity to take stock and introspect. Going back to the genesis of the system of IITs one recalls the words of our first Prime Minister Jawaharlal Nehru 'Quote: "The ambition of the greatest man of our generation - Mahatma Gandhi, has been to wipe every tear from every eye. That may be beyond us, but as long as there are tears and suffering, so long our work will not be over.....the future beckons to us". Unquote' In framing the long term strategy to achieve this goal, creation of IITs, which our Parliament declared to be the "Institutes of National Importance" was a very essential element. And it is for this reason that the GoI subsidises around 80% of the cost of IIT education. As a result, it costs a family about $700 a year for their ward towards room, board and tuition.

5.   With the first IIT set up at Kharagpur at the earlier premises of a Detention Camp - Pandit Nehru remarked that it represented India's urges and India's future in the making. Other IITs followed, with those in the early sixties set up in

collaboration with friendly countries. Today they number 16. President Radhakrishnan at the first convocation of IIT Mumbai in 1962, cautioned against drifting away from the original goal of setting up IITs. He said, and I quote "The strength of a country is judged not by the number of millionaires it has created, but by the poverty it has eliminated" unquote. Profound words indeed.

6.   It is to the credit of the IIT system that there is an immense urge among young Indians to pursue science programs. Whilst it may be the dream of many a young Indian to join the IIT, it comes true for only a miniscule few. Competition for entrance into IITs is so intense that a single point could put a candidate down by 200 ranks. With only 3500 positions available and over two hundred thousand bright applicants for the entrance exam, the acceptance rate is less that 2%. It is pure meritocracy.   I would like to cite some anecdotal experiences shared by Mr. Narayana Murthy, the head of one of our giant IT companies - Infosys. His son wanted to do Computer Science at an IIT, but could not get in. He then went to Cornell, instead. Imagine a kid from India using an Ivy League university as a safety school. Mr. Murthy spoke of cases where students who could not get into Computer Science in IITs, scored scholarships at MIT, Princeton and Caltech. You ladies and gentlemen are the *'cream de la cream'* of the nation, and you make India proud.

7.   Can we therefore conclude that the IITs have all that it takes to make them truly world-class technology institutions? The answer regrettably is <u>not</u> a simple - YES on some counts. Our IITs do not rank in the top hundred institutions in the world in Research. India ranks 12th amongst top 20 countries in terms of publications on science and technologies. We have only 119 researchers in R & D per million people, as compared to 715 of China and 468 in the US. The number of PhDs is a far cry, and even those who get their undergraduate degrees from the IITs almost never pursue postgraduate engineering degrees in India. This in turn results in a depleted faculty pool for India's technical universities. The IITs therefore have yet to fully deliver on the vision and goals articulated by Pandit Nehru and President Radhakrishnan, as assessed, benefits of their efforts are largely confined to the richest 10% of the Indians, and economies abroad.

8.   At the same time I hasten to add that there is no second opinion that IIT-ians stand alongside the best in the world. Their achievements across the globe with a marked presence in America, are indeed many. The technical graduates led by IIT alumni that emigrated to the US in numbers have excelled in entrepreneurship. A study sponsored by Kauffman Foundation concluded, that nationwide, Indians founded 8% of all technology and engineering start ups, while they comprise less than 1% of US population. I understand Indians now outnumber the next 7 immigrant groups combined, and start 33.2% of all immigrant founded start-ups in the US. The fields extends from biosciences,

computers and communications, innovation/manufacturing- related services, semiconductors, software, environmental to defence and aerospace.

9. McKinsey has reported that they have more IIT graduates in their worldwide work force than those from any other university in the world. I believe if one were to walk into any research lab in the United States and count the number of Indians - chances are, you will find more Indian Americans than anyone else. And in the process, as an IIT-ian said, the American consumer and the American business in the end has been the beneficiary. This is buttressed by Resolution 227 passed on April 26, 2005 by the US House of Representatives, and I quote "That the House of Representatives (i) recognizes the valuable and significant contributions of Indian Americans to America; (ii) *honours the economic innovation attributable to graduates of the Indian Institutes of Technology*; and (iii) urges all Americans to recognize the contributions of Indian Americans and have a greater appreciation of the role Indian Americans have played in helping to advance and enrich American society."

10. I would not like to list any names of IIT-ians who have been outstanding successes across the world, as that would take the entire morning, except to say that one common thread running through them is they have an unparalleled spirit of entrepreneurship. Many of you are role models to be emulated by young Indians.

11. As President Pranab Mukerjee observed at the 44th Convocation of IIT Delhi - he said - "Today, the IIT alumni are achievers and leaders in every sphere of human activities - in India's most successful corporates and government ministries and in laboratories of research and innovation, in India and across the world". While stressing that IITs have become a global brand amongst employers, academicians, scientists and industrialists.

12. This is a far cry from the oft repeated phrase "brain-drain" that one heard in India in the 1960s and 70s. It perhaps was also the time when opportunities for harnessing India's intrinsic talent were comparatively limited. I am reminded of a statement by late Mr. Dewang Mehta, President of NASSCOM when in his own **inimitable** way he said "It is better to have brain-drain, than to have brain in the drain".

13. The recent proposed changes in visa policy in America, I understand, are a dampener and a number of young Indian entrepreneurs are considering to return home to start companies and usher in innovation. This bodes well for India. We would like to see new products being patented in India, that in turn create jobs in the manufacturing sector. India needs to create 10M jobs a year - for that is the number of young people joining the job market each year. There is a concurrent requirement to generate the required skills for this aspirational group.

14.   I was touched to read a piece on Pranav Mistry, an IIT-ian known for his cutting edge innovations focussed in the fields of wearable technology among others, and who recently worked in Prime Minister Modi's election campaign, on what motivated him to return home and work with the government. Pranav said - "I am keen to serve one-sixth of the world's population where the miracles of science and technology would multiply manifold for the betterment of mankind. I see myself in a role of bringing change to the lives of masses, which is far more satisfying than being an innovator per se".

15.   I appreciate all of you present here have contributed in many ways to India. It could have been by the way of repatriations at the some point of time. But more importantly many of the IIT alumni who have reached the higher echelons in the corporate world have helped in putting India on the manufacturing and R&D eco system of the world, by convincing their corporations to start operations in India.   Given an opportunity, young professionals in India have risen to the challenge and the increasing number of companies moving operations to India bears testimony. It is possible that some of our current policies need to be tweaked to encourage more companies set up shop in India - and you should see that happening soon enough.

16.   It is a rare opportunity that one gets to speak to such a distinguished audience.   I therefore chose the occasion to place before you a short wish list for your consideration:

    (a) Firstly, as you find the policy environment becoming more conducive, sincerely consider setting up operations in India considering cost of production would be most attractive. There is an aspirational consumer market up for grabs in India. You will find that a product that succeeds in India would also have a ready market in Asia and Africa to begin with. The volumes will more than make up for profit per unit sold;

    (b) Secondly, even if you do not intend to set up your own company, then look towards investing in India. The concept of **venture capital** is virtually non-existent in India.   Do consider giving an opportunity to budding entrepreneurs in India. With your skills you will certainly be able to identify projects that are sound in concept. I have seen some of the programs supported by Grand Challenges Canada in India during the recent visit of Rt. Hon. Governor General of Canada. Each of these programs being steered by young entrepreneurs were progressing on schedule and within their allocated budgets; a ready market awaits them due to uniqueness of their products.   IIT alumni who are success stories could consider replicating this model for young entrepreneurs in India;

(c)   Thirdly, the IITs have a strong supportive alumni network that often finds mention as one of the factors for their success in Silicon Valley. Many of you have contributed substantially to your *alma mater*. This must certainly continue. At the same time I urge you to spare a thought for the India that exists beyond the IITs. I urge you to work towards ensuring that Tier-2 and Tier-3 technical institutions get to the next step up the ladder. I have read about the PAN-IIT initiative of "IIT for ITI". For my Canadian friends, ITI's are Industrial Training Institutes that provide training for turning out skilled workers. A similar initiative needs to be worked out for Universities and Colleges as well.   As President Mukherjee said, the handholding by Institutions of friendly countries in the setting up of IITs has given us a model for the future. The time has come when the established and old IITs have to provide the same kind of support and handholding to new IITs and other institutions of national importance in bringing them on the international map of higher and technical education.   Start with an institution "away" from the metro cities.   Certainly such an institution cannot transform to an IIT overnight - but it could take steps along that path;

(d) Fourthly, try and locate talent in India that can be nurtured. It would be difficult to handle the task on your own for those located abroad. But it should be possible to do that along with the extensive alumni network resident in India. Here I would like to share with my Canadian friends - an experiment in India called the Super 30. It is a operated by Mr. Anand Kumar, a naturally gifted mathematician from a small town. He secured admission to Cambridge University in 1994-95, but could not attend due to his poor financial condition even after looking for sponsors. In due course, he set up the Super 30 coaching class where he selects 30 students with aptitude in technology - with a rider that they must all belong to the economically backward sections of society. He tutors, and provides study materials and lodging to them for a year and prepares them to undertake the IIT entrance exams. **The results** - almost all 30 of them get into the IITs year-after-year. His Mission Statement emphasises the need to catch the students young, and that with the right impetus through innovative teaching they will develop an interest in Mathematics and Science at an early stage.   He sees them preparing for participation in different Olympiads, the thrust being on developing inquisitiveness, so very important for science and math education. I urge the IIT alumni to see how we can have many more Super 30s or similar models, and to never have a Anand Kumar having to forego an invitation to attend the Cambridge University due to paucity of funding. Often when I broach this proposal in a conversation, the question posed is - that an individual wants to contribute, but does not know how to go about it. I think, the IIT alumni

can organise themselves better with the potential offered by internet and social media.

(e)   Fifthly, as an organised body your voice can be put across in a cohesive manner to the highest levels in the Government. You just need to emulate the industry umbrella organisations *viz.,* Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI) that are readily given an audience by the Union Finance Minister including in the process of Budget formulation.

(f)   And finally, IIT alumni have always been forthcoming in extending financial support for deserving programs.   I read about the 2010 graduating class of IIT Mumbai, wherein over 70% of them committed 1% of their annual salary to the corpus of the IIT Bombay Alumni Association. Apart from supporting overall improvement at IIT Mumbai, the fund also advances loans to needy IIT students at less than market rates and provides sign-on bonuses to newly hired faculty. Other such initiatives by IIT alumni are already in place in different ways. However, what India needs is your "time" and your "leadership". I would urge that you take sabbaticals that do not interfere too much with your work and come and spend time in India. Share your experiences with young Indians, share your ideas with educators to improve delivery to students, and help in institutionalising faculty improvement programs.   In the process give priority to Tier II and III cities. Your efforts will pay rich dividends.

17.   Wish lists tend to be unending and so I will stop at that. But let me say once again that it has been a privilege and honour to share a few thoughts with you. India is proud of your achievements and all that you have done to create Brand-India. At the same time, please remember that India still seeks your active participation in its mission to develop into a major economy.

18.   Ladies and gentlemen, thank you for your attention.

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