Dr. APJ Kalam’s address at the
Convocation of NMIMS,
Mumbai
7th August 2014

Evolving a sustainable development system
for the nation

May I be a protector for those without one,
A guide for all travelers on the way;
May I be a bridge, a boat and a ship
For all who wish to cross (the water).

……… by Acharya Shantideva,
a Buddhist Master of 8th century

I am indeed delighted to participate in the Convocation of Narsee Monjee Institute of Management Studies here in Mumbai. I congratulate the graduating students for their academic performance and the Faculty members for shaping the young minds who are going to be a resource in all our national development missions. My greetings to the parents and audience.

Friends, during the last 32 years, Narsee Monjee Institute of Management Studies has graduated into a very large institution having many different disciplines of education. During this period, apart from carrying out education, training, and research missions, NMIMS has been promoting dissemination of knowledge by creating effective linkages between academic and industrial communities. Today, I see before me students from 3 different institutions from the family of Narsee Monjee Institute of Management Studies – the Commerce and Management students from the Anil Surendra Modi...
School of Commerce, the graduates of science from the School of Science and economics students from the Sarla Anil Modi School of Economics. Together you represent the convergence of multi-disciplines of learning – humanities, commerce, technology and it is now important to see how in unison the aspects of education can meet the challenges of humanity.

The topic I have selected for address today is “Evolving a sustainable development system for the nation”.

Friends, while managing SLV-3 or integrated guidance missile development programme or working on India vision 2020, I realized how enquiring and committed minds with a mission focus produced required results. Of all resources, ignited minds of the youth is the most powerful resources, on the earth, above the earth and under the earth. I am happy to realize many youth worked with me for number of years have transformed into creative leaders in various fields in the country, because of their knowledge, hard work and perseverance.

**Combating Economic Turbulence through Global Enterprises**

In recent scenario of global economic turbulence, in both USA and Europe, I reflected on the question, “Is a new Global System Emerging?” Many recent events came before my mind. All of you are aware how scientists from India and USA had been receiving valuable data from their payloads being flown in Indian Chandrayaan, which had been successfully placed into earth orbit and then to lunar orbit through complex orbit maneuvers. In a
unique partnership between India and Russia, a supersonic BrahMos missile has been realized and is available for both the countries and for global market. We have seen how the world specialists were with the Indian Agricultural Scientists, administrators and farmers, when they brought about the first green revolution and they continue to engage in discussions to meet the current challenges. Today the major Indian software firms and many entrepreneurs from India are part of the software progress of the world. In manufacturing sector, we hear Indian companies are acquiring companies from other parts of the world. We saw the world leaders of G-20 addressing the current global financial crisis and how our Prime Minister was giving his valuable expertise to the gathering for practical solutions.

When I was traveling in an Aircraft in the United States, I was told that much of its controls where software driven and most probably developed in India. When I presented my credit card, I was told that it was being processed in the backend server located in Mauritius. When I walked into software development house in Bangalore, I was fascinated to find that it truly presented a multicultural environment. A software developer from china working under a project leader from Korea working with a software engineer from India and a hardware architect from the US and the communication expert from Germany. All working together to solve a banking problem in Australia.

What message do we get from these events and many such occurrences in the past decade? Do they not indicate a new system
of thinking is emerging? Technology has made world to come together. For the past few months, I had several opportunities to meet with world specialists, economists and leaders in India, Israel, UK, USA and other countries. The outcome of the discussions led to interesting possibilities for taking education forward in a “borderless world”. During my last visit to UK, I addressed the World Youth Congress, where I interacted with youth from many countries. Irrespective of nativity, there was a resonance in thinking, “how are we going to live in a peaceful and prosperous world”. We in India are working for a developed India by 2020 with concrete integrated action plans in various areas. I am sure the experience gained from one sixth of the global population will be valuable for the entire world.

Let me now first talk about global economic turbulence.

**Current Ambience**

India is today the 3rd largest economy in terms of GDP. Indian economy was growing at an average of 9% per annum till 2009. Then following the US originated crisis, Indian economy has got affected due to global economic turbulence, nevertheless it grew at about 7% in 2009. In 2010, the GDP Growth once again started reaching 9%. Then in 2011, again with the Europe originated crisis adding on the turbulence, the economy slowed down but nevertheless grew at about 6.9%. The slowdown became more pronounced in 2012 and 2013, partially attributed to the currency
rate crisis, and the economy grew at 4.7% and 4.5% in 2012 and 2013 respectively.

Two trends emerge here. First, India is resilient economy when it comes to its dependence on external factors – as shown in 2008-10. However, Indian economy has its own domestic factors of dependence, largely due to trade deficits, which can undermine the growth rates.

I was asking myself, what type of innovation is needed to enrich the Indian economy in the present circumstances. I had discussions, on this subject, with many experts. It came to light that the Indian economy will be less affected due to the world financial crisis, of USA and Europe. This is due to (i) The liberalization process in India has its checks and balances consistent with the unique social requirements of the country. (ii) The Indian banking system has always been conservative which has prevented the crisis (iii) The Indian psyche is generally savings orientated and living within means is part of the mindset. However, at the same time India’s trade deficits, which is excess of imports over exports is a matter of concern, and last year it stood at $190 Billion. The major factor behind this is the import of crude oil, is about $170 billion, or about 87% of the total trade deficit – this is followed by import of gold.

This is the time, technological innovation has to encourage in our thinking to rejuvenate in particular agricultural and rural sector through value addition, the small and medium scale
industries and enterprises for making higher levels of contribution to the GDP. I foresee possibilities of creating new markets through rural potential and employment, giving rise to interesting possibilities of Public-Private-community partnerships and international partnerships. Above all, we need effective policy alignments to suit the conditions. Also, the scientists and technologists have to work in appropriate region-specific rural technologies to transform Indian rural sector into a vibrant socio-economic entity. This should spur exports and reliance on non-oil imports.

Another area, which of course needs to be pursued is the area of energy independence – which means freedom from fossil fuels by setting a mission mode program in hydro, solar, nuclear, biofuels and wind power. We need to set a 100% energy independence target by the year 2030 to create an economy which is not burdened by the weight of our energy demands.

Now, let me give my visualization of India during the year 2020.

**Distinctive profile of the nation**

1. A Nation where the rural and urban divide has reduced to a thin line.
2. A Nation where there is an equitable distribution and adequate access to energy and quality water.
3. A Nation where agriculture, industry and service sector work together in symphony.
4. A Nation where education with value system is not denied to any meritorious candidates because of societal or economic discrimination.

5. A Nation, which is the best destination for the most talented scholars, scientists, and investors.

6. A Nation where the best of health care is available to all.

7. A Nation where the governance is responsive, transparent and corruption free.

8. A Nation where poverty has been totally eradicated, illiteracy removed and crimes against women and children are absent and none in the society feels alienated.

9. A Nation that is prosperous, healthy, secure, devoid of terrorism, peaceful and happy and continues with a sustainable growth path.

10. A Nation that is one of the best places to live in and is proud of its leadership.

Integrated Action for developed India

To achieve the distinctive profile of India, we have the mission of transforming India into a developed nation. We have identified five areas where India has a core competence for integrated action: (1) Agriculture and food processing (2) Education and Healthcare (3) Information and Communication Technology (4) Reliable and Quality Electric power, Surface transport and Infrastructure for all parts of the country and (5) Self reliance in critical technologies. These five areas are closely inter-related and if progressed in a
coordinated way, will lead to food, economic and national security and achieving Energy independence.

**Changing business world**

Friends, I am sure many of you would be joining some of the best corporations of the nation and abroad in the times ahead. I am also sure, that some of you today, and some in future, will start up your own enterprises in different fields. I have some observations for you, as managers, economists, commerce experts and entrepreneurs, of three new business trends which are emerging in the 21st century.

First, there is going to be a challenge of facing a new consumer. Experts estimate that developing economies could account for 60% of the new consumption growth in the next years – a potential $15 Trillion opportunity. This would reside in China, India, Brazil, Mexico, Turkey and Russia. Understanding and predicting the needs of these new consumers, their price sensitivities etc. will be critical for businesses to thrive. Simple well catered products, often online, such as WhatsApp, are going to grow into $19 Billion valuations, starting from scratch, within a period of less than a decade.

Second, there is going to be a trend of new expectations. What worked yesterday might not work today and is almost definite to fail tomorrow. There will be no such concept of stable businesses, and corporations of tomorrow will be dynamic, evolving and constantly improving – following the Japanese management concept of Kaizen.
Consumers expect, not only better and reliable services, they expect businesses to be responsible and environment friendly. Studies have shown that 82% of developed world is willing to pay premium of upto 20% for products which are considered socially responsible.

Third, is the emergence of resource constraints. A growing population and consumption will almost certainly create tremendous pressures on existing raw material, including iron ore, coal, fuels, minerals and even fresh water. Hence, new materials, such as carbon fibers, advanced ceramics, high temperature semiconductor and bio-based plastics will create breakthroughs in the next one decade. Industries need to be ready to face such transformational times and also manage price volatilities which we are already facing in terms of almost all raw materials.

Towards a Global Sustainable System

Friends, Today, more than 800 million people in India and in the world about 3 billion people, are living in villages, and hence any mission towards global prosperity and happiness has to be inclusive of the rural regions. When you graduate out of this campus today, as fresh engineers and technologists, you have to ensure that the applications of science, technology and leadership quality reach the most underprivileged population. Some of you, may choose to pursue careers along this line and with your technological innovation, bring about unforeseen enhancement to the current state. Hence, let us discuss, how sustainable
development of 600,000 villages in our country can be achieved through sustainable development systems driven by entrepreneurs.

In the past, government, private and public sectors have been taking up rural development in parts. For example, starting an education institutions, starting a healthcare centers, laying roads, building houses, building a marketing complex, giving a communication link in a particular rural area have been taken up in the past as individual activities. During the last few decades, it is our experience that these initiatives starts well, just like heavy rain resulting into multiple streams of water flow. As soon as the rain stops, few days later all the streams get dried up because there is no water bodies to collect the surplus water and store it at the right place. PURA envisages an integrated sustainable development plan with employment generation as the focus, driven by provision of the habitat, healthcare, education, skill development, physical and electronic connectivity and marketing as a public-private partnership initiative.

**Subsystems of sustainable development**

Dear friends, I would first like to discuss on what constitutes sustainable development. Sustainable development means, integrated thoughts and actions which not only lead to financially robust systems but also keenly focus on societal development, environmental conservation, technological infusion and employment creation. In the context of the rural India, it would mean the evolution of socio-economic entities which transform the means of
livelihood and quality of life for 800 million rural citizens with a customized and adaptable action plan which follows the route of citizen empowerment and capacity building. It could also require to build a society whose fabric is strongly bounded by a value system of harmony, respect for diversity, and care for the environment. Friends, when we discuss today about the opportunities and challenges of sustainable development like PURA, we should keep all these aspects in mind.

The mission of PURA, apart from concentrating on reinforcing agriculture, will emphasize on agro processing, development of Rural Craftsmanship, dairy, fish and fish processing, silk production, so that the non-farm revenue for the rural sector is enhanced, based on the core competence of the region. Let me discuss briefly the components of typical PURA and method of integration.

**PURA: connectivities which lead to it**

PURA essentially requires four levels of connectivity which have to be customized according to local competencies and needs. It means that:

1. The villages must be connected with in themselves and with main towns and metros through by good roads and wherever needed by railway lines. They must have other infrastructure like schools, colleges, hospitals and amenities for the local population and the visitors. This is **physical connectivity**.
2. In the emerging knowledge era, the native knowledge has to be preserved and enhanced with latest tools of technology,
training and research. The villages have to have access to good education from best teachers wherever they are, must have the benefit of good medical treatment, and must have latest information on their pursuits like agriculture, fishery, horticulture and food processing. That means they have to have **electronic connectivity**.

3. Once the Physical and Electronic connectivity are enabled, the knowledge connectivity is enabled. That can facilitate the ability to increase the productivity, the utilization of spare time, awareness of health welfare, ensuring a market for products, increasing quality conscience, interacting with partners, getting the best equipment, increasing transparency and so in general **knowledge connectivity**, that progresses core competence of the rural environment with additional to technology. Hence, these three connectivities integrated way lead to economic connectivity.

4. Once the three connectivities viz Physical, Electronic and knowledge connectivity are ensured, they facilitate earning capacity leading to economic connectivity. When we Provide Urban Amenities to Rural Areas (PURA), we can lead to upliftment of rural areas, we can attract investors, we can introduce effectively useful systems like Rural BPOs, Micro and small-scale industries.

The number of PURA for the whole country is estimated to be 7000 covering 600,000 villages where 700 million people live. There
are number operational PURA in our country initiated by many educational, healthcare institutions, industry and other institutions. Government of India is already moving ahead with the implementation of PURA on the national scale across several districts of India.

**Typical Working PURAs**

It is possible to get an insight of PURA by studying few of the operational PURAs which are functioning in different parts of the country. They are: Periyar PURA, Loni PURA, Chitrakoot PURA, Meenakshi PURA and Warana PURA. Let me highlight few aspects of Warana PURA.

**Warana PURA: Farmer cooperative in action**

Friends, in March 2010 I was in the Warana valley of Kolhapur district. The Warana PURA mission began as a sugar cooperative movement, as a vision of a great social leader called Sah-kaar-shri Tatyasaheb Kore in 1950s to transform the Warana region which was a backward area infested with unlawful activities. The Warana PURA has since then evolved on a cooperative framework and implemented sustainable models based on the core competencies of the rural areas covering 69 villages and about 4 lakh people. This PURA model, which has more than 60,000 farmers, women entrepreneurs and villagers as their members, has been giving consistent dividend of over 25%. The Warana PURA programme has succeeded in creating income generation through value addition to sugar and dairy products, innovative agricultural practices and entrepreneurship, striving towards literacy and
healthcare for all. For the welfare of landless villagers, Tatyasaheb Kore envisioned and pioneered the creation of the Warana Poultry and Warana Cooperative Dairy with more than 16000 milk producers spread over 60 villages.

Similarly, the Warana PURA has also initiated cooperative educational institutions, retail outlets and hospital for better standards of living. The Warana PURA is an example of how integrated development can be achieved through a strongly knit cooperative structure with value addition and economic empowerment.

Friends, I have specifically explained, how integrated rural development can take place through the creation of PURA complexes covering groups of villages in any region.

**Economic development, competitiveness and creative leadership**

Since, I am in the midst of graduating students, let me discuss the linkage between national economic development and creative leadership.

- A nation’s Economic development is powered by competitiveness.
- Competitiveness is powered by knowledge power.
- Knowledge power is powered by Technology and innovation.
- Technology and innovation is powered by resource investment.
- Resource investment is powered by return on Investment.
- Return on investment is powered by revenue.
Revenue is powered by Volume and repeat sales.
Volume and repeat sales is powered by customer loyalty.
Customer loyalty is powered by Quality and value of products.
Quality and value of products is powered by Employee Productivity and innovation.
Employee Productivity is powered by Employee Loyalty.
Employee Loyalty is powered by employee satisfaction.
Employee satisfaction is powered by working environment.
Working Environment is powered by management innovation.
Management innovation is powered by Creative leadership.

For success in all the missions, it is essential to have creative leaders. Creative leadership means, exercising the vision to change the traditional role from the commander to the coach, manager to mentor, from director to delegator and from one who demands respect to one who facilitates self-respect. For enhancing enterprise value, we need the large number of creative leaders.

Conclusion: Culture of Excellence

Friends, you all belong to the youth community, which should stand for culture of excellence. Moreover, excellence is not by accident. It is a process, where an individual or organization or nation continuously strives to better oneself. The performance standards are set by themselves, they work on their dreams with focus and are prepared to take calculated risks and do not be deterred by failures as they move towards their dreams. Then they
step up their dreams, as they tend to reach the original targets. They strive to work to their potential, in the process, they increase their performance thereby multiplying further their potential, and this is an unending life cycle phenomenon. They are not in competition with anyone else, but themselves. That is the culture of excellence. I am sure, each one of you will aspire to become unique with culture of excellence.

Once again, let me congratulate all the graduating students of Narsee Monjee Institute of Management Studies. My greetings and best wishes to all of you for success in all your missions.

May God Bless you.
Oath for Students

1. I will have a goal and work hard to achieve that goal.
2. Wherever I am, a thought will always come to my mind. That is what process or product I can innovate, invent or discover.
3. I will always remember that “Let not my winged days, be spent in vain”.
4. I realize I have to set a great scientific goal that will lead me to think high, work and persevere to realize the goal.
5. My greatest friends will be great scientific and technological and managerial minds, good teachers and good books.
6. I firmly believe that no problem can defeat me; I will become the captain of the problem, defeat the problem and succeed.
7. I will work and work for removing the problems faced by planet earth in the areas of water, energy, habitat, waste management and environment through the application of engineering and technology.
8. As a youth of my nation, I will work and work with courage to achieve success in all my tasks and enjoy the success of others.
9. My National Flag flies in my heart and I will bring glory to my nation.