ISSN 2347-1522

■ Vol. III ■ Issue No.3 July 2015

INDIA FOUNDATION JOURNAL

Op-Eds

- Smart City and Safe City or City Survillance Projects in India
- Education : Looking beyond the Books
- Upstart India: A Case to Complement "Make in India" with "Start in India"

Reports

- India - Bangladesh Relations : Bilateralism and Beyond
- 4th Young Thinkers Meet

Book Review

- Wings of Fire - An Autobiography - APJ Abdul Kalam With Arun Tiwari

Focus: One Year of Change

- Modi Sarkar : Economic Growth and Governance - Shakti Sinha
- Economy and Diplomacy under Modi - Ashok Malik
- First Year of Modi Government and India's Enhanced Stature - Alok Bansal
- Modi's India Build Out: Brick by Brick - M. J. Akbar

India Foundation Journal

Vol. III
Issue No.3

July 2015

Editor
Shaurya Doval

Assistant Editor
Anjana Deepthi

Publisher
India Foundation
New Delhi

E-mail
mail@indiafoundation.in

Website
www.indiafoundation.in

for private circulation only

Editor's Note

Dear Readers,

I am lucky that I get to travel across the world as part of my professional commitments. My travels expose me to not only remarkable places but also very accomplished and perceptible individuals across the globe. Wherever I go I hear flowing tributes and accolades about India. India is a country that evokes so many positive emotions in people in all its dimensions from its glorious past to its potential. Then when I come back to the country there seems to be so much negativity and haplessness about our future in the media and the intelligentsia that I am often left completely confused. Is it that the world sees something in us that we are not able to see or are we deluding the world and our reality is indeed very different from perception.

The Modi Government has just completed a year in office. The last one year has seen changes that were unheard of and till now unseen atleast in Delhi if not across the country. Here is a government that has tried to bring in financial inclusion and social security across the country in a manner that is both unprecedented in both its scope and size. And yet there are many naysayers who complain that not enough has been done and that the performance has not kept pace with the aspirations. In our focus section we are lucky to have from some of the finest minds in the country a rather comprehensive assessment of the one year performance of the Modi Sarkar. The authors have tried to put in perspective in the hits and misses of the government and the direction in which this government has started to take the nation and its people and what it entails for the future of the nation. I hope after reading them you will be able to make a much more informed judgment of the performance of the government and possibly also refine your own views on the same.

At India Foundation we have been busy with our activities on promoting the national cause in our little way. As a think tank we have a clear charter to study and solve for the nation problems and we try to stick as close as possible to our defined objectives. We have published as usual a report out on our activities during the period. We are hopeful that you will enjoy reading about our activities and get associated with them .

We are already on the job for organizing so many large conclaves over the next few months and will revert back to you in the coming issues as we make further progress on the same. Please keep writing to us on your ideas. We value them tremendously and they help us plan our activities and our research better. Our nation is never short on opportunities to positively contribute.

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TABLE OF CONTENTS

FOCUS

OP-EDS

REPORTS

BOOK REVIEW

◆◆◆

Modi Sarkar: Economic Growth and Governance

***Shakti Sinha**

The Modi sarkar, one year plus, is increasingly facing the music from many commentators who are disappointed with the pace of economic reforms, and of lack of systemic changes in governance. This is not a surprise but not for the expected reasons; it has in fact performed quite creditably. More than any government, it has shown the most determination to try move India to a different growth trajectory. But the story is not one of unalloyed success even as the government has launched interesting and comprehensive initiatives across sectors that should lead India to sustainable high growth.

Part of the reason for this disappointment is obviously the near-paralytic performance of UPA II, which had lost the plot altogether. The result was persistent high inflation, particularly of food articles even as growth plunged. Looking back, it seems quite unbelievable that a country with a per capita income of US$ 1500 (2013) should be stuck in stag-inflation, with no obvious policy tools available to pull India out of the economic quagmire. Persistent fiscal deficits left no headroom for pump-priming the economy, leave alone for carrying out the much-needed public investments in infrastructure to sort out the bottlenecks constraining private investment. The Reserve Bank could not reduce interest rates in the face of the twin evils of high inflation and high fiscal deficits, even as the economy was crying for a rate cut. Starved of both public and private investment, the economy was trapped in a low-equilibrium cycle. The then Finance Minister, and now our Rashtrapati, called the state of affairs as 'policy paralysis' as the governance system went into a shell with a refusal to be identified as a problem solver lest the efficient bureaucrat be hauled up before CBI and sundry authorities. This in an environment where the 'problem-creator' thrived, those who could roadblock development were the politically correct even hailed as 'pro-poor' though the poor were never consulted whether they approved of such behaviour and actions. Never mind that each of these roadblocks could be bypassed at a price. Naturally the cynical found it a perfect environment for rent-seeking with crony capitalism in full flow as seen, for example, in the allotment of scare natural resources – captive mines, spectrum etc.

Restoration to normal growth rates over the past year is a considerable achievement but why is that professional commentators, not politically motivated, are feeling dissatisfied by what they see as lack of action. They wanted to see the government move decisively, clear up the cob-webs that the years of policy paralysis left behind. From the perspective of many of these commentators the government's economic performance and direction is below par but that is because they expected revolutionary change. Therefore, they discount the efforts made, and attribute the recovery more to sentiment than to actual efforts.

Basically, an unstated assumption was that Modi would be India's Thatcher and Reagan rolled into one, who would 'unshackle' the productive forces in line with how Thatcher-Reagan had "zestily slashed public spending, cut welfare programmes, cut taxes, privatized government-owned enterprises, battled trade unions, and the like." In fact, this is a simplification of the economic philosophies of both Thatcher and Reagan, particularly the latter under whom the federal deficit ballooned. The other,

**The author is Chairman, South Asian Institute for Strategic Affairs, India*

unstated, model is that of the big-bang reforms developed at Harvard under the leadership of the economist Jeffery Sachs. Russia, Poland and Bolivia tried this, the former two in the wake of the collapse of their communist regimes. It worked after a fashion in Poland, which along with the Baltic nations made the most dramatic and successful transition to becoming market economies with the least disruption. But the idea of a knight in shining armour cutting through the dead-weights and launching a country on path to rapid growth persists. India is such an analysis in better placed that what Poland was in 1990 to adopt a big-bang approach. At the bare minimum, the expectations were that supply-side distortions in land, labour and factor markets would be tackled aggressively. Instead what has been on offer has been largely incremental movement lacking in ambition and boldness. Are these critics right?

Before going into the details of the performance of the government, it would be useful to go back to the vision that Modi articulated before the elections. Is Modinomics a thought-through economic philosophy guided by Milton Friedman? Or by Jagdish Bhagwati? It is the contention of this writer that the economic policies of the Modi government, like his foreign policy, are not driven by any rigid ideological approach, they are grounded in a robust, commonsensical approach guided by the vision of India fulfilling its destiny. Modi's economic vision has never been presented in a comprehensive or packaged manner. They are best derived from a series of speeches that he delivered in Delhi on February 27th, 2014, including under the auspices of India Foundation.

Greater economic federalism and simplified but effective governance emerged as the twin pillars of his vision. Modi made a strong pitch for placing states at the centre of decision making and action by saying that it was not the PM and cabinet, but the PM and states' chief minister's who were the main players. Delhi could no longer run India and that states must be empowered. And he placed the citizens of India at the centre, recalling how Gandhi had broadened the freedom struggle to make it a mass movement. According to him, economic development could not be a task of the government alone; people's involvement and initiatives was a must. He moved the debate away from poverty alleviation to its removal, which required a mission mode approach. People must be assured a life of dignity, which implied more jobs and the freedom of choice.

Surprisingly for many, he spoke up for both goods and services tax (GST) and for FDI. However, he said that before GST could be rolled out, it required suitable information-technology (IT) infrastructure in place. (Gujarat and Madhya Pradesh, both BJP states, were seen as two hold-outs preventing GST from being put in place). Linking an IT backbone to GST, Modi revealed two of his key beliefs. One, that IT along with other frontier disciplines like bi-technology, environmental technology, research and innovation are key drivers of economic growth. Two, he stressed that improved governance processes necessary for greater efficiency and accountability needs a strong IT component. What Modi said, and did not say, on FDI came as a surprise to many, particularly those in the trading community who have been campaigning against FDI in multi-brand retail and who are considered as forming the core of BJP's support base. He was silent on multi-brand retail and did not repeat his party's opposition to it; rather he referred to FDI an opportunity and also exhorted the trading community to face global challenges. He asked them to modernise their supply and distribution chains and not to be afraid of the growth of on-line trading platforms.

Modi's views on privatisation of public sector enterprises and on urbanisation also came as a surprise to many. On the former, he chose to focus on running them professionally. Modi also said that

migration to big cities should stop, and in that context, rural areas should have the same quality of public services as urban areas, a pet theme of President Abdul Kalam who had propagated this specific model. As prime minister, Modi has embraced urbanisation in a big way as necessary for employment generation and better quality of life.

He also touched on the two important areas of health and education. The former needed a refocus, moving away from curative to preventive. Improved sanitation was a key component of improved wellness and reduction of illness. And if India could be proud of its IIMs and IITs, why could it not train teachers, who could be in demand not only in India but all over the world?

Arguing for what he termed as 'minimum government, maximum governance', Modi said that India should have lesser laws and that trust, not laws, should run systems. This would require an overhaul of governance processes to make it more effective and accountable. Improved governance would enable achieving better economic and social outcomes. Modi articulated very clearly that India is land of its components – its people, its political units (States, districts, cities & towns, villages) – and it can only realise its potential by harnessing their respective talents and energies.

As this misunderstanding of the government's economic vision shows, there is a much greater need to engage with critics and commentators outside the government for two reasons. One, they represent a cross-section of society with multifarious experiences, so they can contribute to the policy dialogue. It can be nobody's case that all wisdom resides in the government or that since the NITI Aayog has been set-up to function as the government's premier think-tank with a mandate to engage relevant stake-holders, the government should carry on regardless of its critics and of (disappointed) supporters. Two, because public should be aware of not just the end-goals but also of the intermediate steps, obstacles encountered and progress achieved. Once such a dialogue becomes established, the public at large would be better informed of development being engendered by the government. Fortunately, the Chief Economic Advisor has been writing in the media and speaking at different forums in an organised manner explaining the rationale behind many economic policies. This should be systematised.

It must be understood that large country like India with so much diversity – socially, economically, politically, linguistically – cannot change direction abruptly. There are multiple systems in operation, some independently, others linked to but not necessarily aligned, with other systems. In the absence of a solid factual database about these subsystems and their impact on each other, an incremental approach often works best. It is a truism but change, even where critically needed, is disruptive. But political economy dictates that such change cannot be disruptive beyond a point. Such disruption would have the added disadvantage of derailing the reforms agenda. Nor does change necessarily lead to rapid results, particularly where governance systems are weak. What the Modi sarkar has been doing really well, in a quiet but firm manner eschewing drama, is to deliberately change the rules of the game so that India changes directions and starts delivering development much more efficiently and effectively.

Specifically, cooperative federalism is no more a slogan; it is fast being actualised. The abolition of the Stalinist relic, the Planning Commission, signifies the beginning of the end of prescriptive policies divorced from the different context in which it has to deliver. It is often forgotten that the Planning Commission was neither a Constitutional body nor a statutory one; it was a creation of a resolution of the Union cabinet. It reported to the Prime Minister, who was both its Chairman and its Minister. The NITI Aayog looks exactly the same in these respects but

where it differs from the Planning Commission is that it actually seeks to give the States a role in its management, and creates a mechanism to sort out regional/ inter-state issues. Unlike the unitary nature of the Planning Commission, the NITI Aayog has a governing council whose members will be chief ministers of states and lt. governors of union territories. Further, it can constitute regional councils on 'specific issues and contingencies impacting more than a state or a region'. The PM or his nominee would chair this issue-based council whose members would be the relevant chief minsters and lt. governors. The NITI Aayog's architecture makes the states effective stakeholders in the development process, a true example of cooperative federalism.

While the establishment of the NITI Aayog hardly seems revolutionary, though in fact, its mandate of being the think-tank of the union and state governments and its lack of role in allocation of fiscal resources to states is actually quite a game-changer. This change must actually be seen in the context of what is happening in fiscal devolution with the government accepting the recommendations of the Fourteenth Finance Commission (FFC). The FFC moved beyond incrementalism when it recommended that 42% of tax revenues devolve to the States, from the existing 32%. To put these figures in perspective, the two previous Finance Commissions had to devolution numbers going up by 1% and 1.5% respectively. A number of commentators have expressed themselves that all previous finance commissions had seen their recommendations accepted by the executive. Paradoxically, this made successive finance commissions cautious as none wanted to be the first commission whose recommendations would be rejected. The FFC has been bold and must be commended. And much more the union government is to be complimented that it accepted this revolutionary change but even more that the FFC had the confidence that the present government genuinely believed in cooperative federalism and it would accept such a bold approach. The FFC has also removed the false dichotomy between Plan and Non-Plan revenue expenditures are concerned and looked at them holistically, making for improved governance.

Earlier, the Planning Commission had taken on the responsibility of dispensing with finances to the states upsetting the nuanced position the Constitution placed Union-States relationship and division of responsibilities. In the bargain, it violated all normative criteria and paced the States in the position of supplicants. Fundamentally, the balance has been regained and the states have emerged as equal partners.

India needs both urbanisation and industrialisation to create employment and give the Indian people the opportunity to lead healthy and productive lives. The 'Make in India' campaign represents the pinnacle of economic policies of the last year, with its potential to change the structure of the Indian economy so that adequate jobs can be generated in the economy. New and revamped policies on urbanisation including the 100 smart cities, the Swacch Bharat Abhiyaan, the different industrial corridors, the Act East policy, the Jan Dhan Yojana, Skilling India, auction of spectrum and of coal mines, improvement in soil health to push agricultural productivity etc. must be seen as complementing each other as much as they seek to achieve their own objectives. In that sense, while not forming a well-laid out and mapped strategy of economic growth like the Feldman-Mahalanobis model that guided India's second five-year plan, Modi's economic road-map is still a work in progress, with certain key issues like recapitalisation of public sector banks unaddressed. But what comes through it is post-ideology based on common sense, or to quote Deng Xiaoping, it is akin to 'crossing the river by feeling the stones.'

What must be kept in mind is that while many of

these social and economic initiatives would yield results in the short-term, for most favourable outcomes would be significantly visible only after 5-7 years. These are many potential game-changers that would correct the distortions in the investment regime etc that has dug deep roots in our society. Specifically the votaries and beneficiaries of status quo will not let these changes happen easily – the ill-informed debate of the much-needed changes to the land acquisition and attempts to link random events to the changes attempted shows that there are many potential political minefields that must be navigated with courage and determination.

Narendra Modi came to power based on his enviable reputation as an economic performer. Paradoxically, today he is seen as an extremely hands-on foreign policy driven Prime Minister. A closer look at his foreign policy initiatives would show a very strong synergy with his economic policies. Diplomacy under him has emerged as a tool to facilitate domestic growth. He has, in that sense, transcended Nehru's view of foreign policy as an outcome of economic policies. He has also emerged as India's leading salesperson like leaders of other major economies who unabashedly push their country's interests, selling India's advantages as an investment destination, seeking to attract capital and technology to kick-start Make-in-India. Modi clearly comes across as asserting India's interests without reticence to help secure it of its rightful place in the world. The approach is, unsurprising, commonsensical and non-doctrinaire.

Before concluding, it would be useful to briefly review Modi's approach to governance. Here the record is more mixed. While on one hand, like his foreign and economic policies, he has put considerable and political capital to make governance systems more imaginative, responsive and efficient. He is the first prime minister to open his doors to secretaries to government and that too not as one-off exercise. He encouraged the airing of innovative ideas, disregarding formality and protocol. Some of the early results are encouraging. The development of new economic and social initiatives owes a lot to the encouraging eco-system created. A new system of staffing senior positions in public sector banks looks promising. But there are also complaints that excessive centralisation of decision making is holding up decision-making. There have been long delays in filling up important positions like Central Vigilance Commissioner, Central Information Commissioner etc., which have not gone down well. Worse, the tendency of senior bureaucracy to avoid taking decisions persists. Instead, the emergence of a strong prime minister's office has worked to the disadvantage of Modi's efforts of making governance more efficient and accountable because senior bureaucrats are content to refer all matters to it, rather than trying to sort them out themselves. Fortunately, Modi has institutionalised regular review meeting with ministries and with state government, using a rigorous IT platform and video-conferencing. But the shift to making the system more accountable remains a big challenge. It would be worthwhile to charge the NITI Aayog with the task of working out improvements and reforms to lift India's governance capabilities and performance to mush higher levels.

The Modi government has a long way to go if it is to meet the expectations and needs of the Indian people who elected them to office so decisively. The leadership is clear and decisive. But the challenges, expectation and needs are unenviable, and the goalpost will keep shifting. Fortunately, the journey is well begun.

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FOCUS

Economy and Diplomacy under Modi

***Ashok Malik**

As the second year of Narendra Modi's prime ministry deepens, how are we to judge the achievements of years one? How does one approach this task? Does one resort to a dhobi list of new projects and initiatives, diplomatic events, blockbuster announcements and actual achievements? Does one obsess almost exclusively with the economy, a principal factor behind Modi's mandate?

In a country where substantial sections of people are still poor, is Modi's record on welfare the true benchmark? On the other hand, there is that intangible: perceptions of corruption. Anecdotal evidence would suggest the upper echelons of this government are scrupulously clean and the pay-as-you-go regime of the UPA years has ended. Is this achievement enough?

If it's hard numbers that are preferred, should one be looking at investment figures – at FDI proposals and FII inflows? The latter have been substantial, but it is the former that are more important. Foreign and domestic investment in the real economy, as opposed to the stock market, will decide Modi's re-election chances in 2019. The signs have been encouraging, but the investment cycle has not quite begun.

The Modi mandate of 2014 was majestic and seminal. Its true import, the subterranean aspirations and forces that shaped it, has perhaps not been appreciated enough. It spoke for an urgency and a tectonic transformation that Indian society is seeking. Crucially the expression "tectonic transformation" should not be confused with that lazy term "big bang reforms" – and with individual policies that op-ed writers describe as must-haves. A better benchmark would be the very political philosophy Modi has embraced.

Those who backed Modi made two bets on him: that he would understand the limits of what the Indian state could do vis-à-vis the Indian citizen; and understand the limits of what the Union government should do vis-à-vis state governments. The first was a revolt against an overdone statism and socialist hangover that had resisted the liberalisation of 1991 and made a strong comeback in the Sonia Gandhi years. The second was a recognition that India's contemporary polity was far more federal than when the Constitution was written. A grand bargain between central and state governments, or at least a corrective, was needed.

Both these frameworks are cross-cutting. They have implications for economic growth, social welfare, development, and empowerment of the community, the family and the individual. They expand the purview of what we call "reform". The ability to privatise a loss-making government-owned hotel reflects a sensitivity to what the state should or shouldn't do, and what should be left to society and citizen. So does the abolition of a system of attestation of papers by gazetted officers and trusting the citizen to validate his own documents. Modi has not done the first, not yet; but he has done the second. He has indicated his direction.

To this writer's mind, the Modi government's two signal achievements this year are the Atal Pension Yojana and the transfer of more revenue to the states so as to make them financially viable. These may sound boring and unglamorous when compared to a high-octane event at Madison Square Garden or yet another television debate on the "Idea of India", but they do reveal a strategic vision.

The Atal Pension Yojana is a social inclusion

** The author is a Senior Journalist and Columnist*

scheme designed for the underprivileged, those working in the informal economy and those in that grey zone between poverty and middle class. It asks the citizen to invest in a pension fund and promises to match his contribution up to a reasonable limit. It incentivises the citizen to plan for his (or increasingly her) future and retirement and to take ownership of life decisions.

It promises the government will help if the citizen helps himself. This suggests a gradual but clear shift from bottomless-pit welfare programmes that budget for nothing but a community on permanent dole, with no motivation for seeking employment opportunities. In pushing such a pension scheme as a flagship welfare programme, Modi is attempting not economics but social engineering.

The attempt to redress the skewed equation between New Delhi and the states has been no less dramatic. The acceptance of the Finance Commission report is being complemented by a devolution of welfare and anti-poverty programmes and programme design to state governments. This is revolutionary in a country where 60 per cent of IAS officers in the Union government have hitherto focused on issues such as health and education, which are in the state government list as per the Constitution.

The decision to give the bulk of income from coal and mineral auctions to the states where these resources lie too reflects a new politics. The winners here include non-BJP run states such as Orissa, Bihar and West Bengal. In the latter two, the BJP is to take on regional rivals in tough elections in the coming year. Yet, this did not tempt the Modi government into a re-think. In private conversations, regional parties have appreciated this and contrasted it with the UPA years.

Eventually, the key to Modi's economic success lies in the states. Make in India cannot happen without state governments taking charge of projects and being welcoming of investment. In his first year, Modi has promised to facilitate them by allowing flexibility in labour and land acquisition laws, and in quick, fair and politically-agnostic environmental clearances. He has started to institutionalise a new federal culture. His rewards – and India's rewards – will come in subsequent years.

If the economy has been central to Modi's domestic agenda, it has been his calling card in the diplomatic sphere as well. Here, he has been valued as a prime minister who can transform the Indian economy, and been perceived by international observers as a strong, confident and nationalist leader. What do these terms amount to and how have they affected the shaping of his foreign policy?

Take China, a country that has figured several times in Modi's diplomatic conversations in the past year. On various platforms, Modi has tested the Chinese leadership and been tested by it (notably in Ladakh in September 2014). His visits to Japan and Australia had clear references to China as a non-status quoist power. When President Barack Obama visited India in January, a separate statement on the Asia-Pacific and Indian Ocean Region was signed.

Yet, beyond this Modi has been careful. He has not used his domestic capital recklessly. He knows he doesn't have the economy to enter into a rapid arms race with China. He has also resisted pointed suggestions, made through the past year and repeated by Western friends of Beijing who have visited Delhi, that the presence of strong leaders such as Modi and President Xi Jinping gives the two Asian giants a chance to reach a final border settlement.

Modi has not bitten the bait, realising that behind the Chinese appeal to his vanity is a challenge. Any final settlement would see India sacrificing territory it has historically claimed as its own. Modi does not have the mandate and economic achievements – at least not at the moment – to be able to sell this to his public.

As such, ignoring both the traditionalists at home

who argue that he "talk territory, not economy" and the suggestive siren calls from Beijing and the China lobby in certain Western think-tanks, Modi has taken a pragmatic approach. He has concluded he must play to his immediate assets. His toolkit for China consists of two items the Chinese understand best: commerce and craft.

Modi has used his strength in the Indian system to give the Chinese what Indian suspicion has hitherto denied them: market access. A careful reading of the India-China joint statement in Beijing this past week will find it follows the same template as the India-US joint statement in Washington, DC, in September 2014. Both statements are lengthy and see India offering the other country a wider embrace and a chance to engage much more deeply with the core of Indian society and economic development, in what is poised to be a transformative decade.

Inevitably, the US statement is much richer. In the case of China, Modi has dangled the carrot of an Indian infrastructure story – power, telecom, railways, ports – where excess Chinese capacities can be deployed to mutual profit. The Indian market for Chinese products emerged almost by accident, without the Chinese making the strategic effort they put in for the American and European markets. Yet, India is now too substantial for China to wish away, especially in an hour of economic slowdown.

Modi has promised to take on the naysayers and intelligence agencies in his backyard. He has delivered on – at least committed to the delivery of – an easier visa regime for Chinese visitors. He has advised the Chinese that a degree of manufacturing in India could make the flow of Chinese goods that much easier to navigate in India's polity. He has invited the Chinese to partner in areas as far apart as skill building and urbanisation. In the joint statement, at India's behest, there was even a paragraph on cooperation in space and civil nuclear technology.

Nevertheless Modi has not been without craft. While Manmohan Singh recognised the capacity to use India's economic leverage, he was hamstrung by his party and government: ranging from officials in thrall of China, to business auxiliaries of Hainan Airways among his minders.

They did not give him the room he needed. He watched helplessly while the Chinese made sizeable forays into south Asia. In contrast, Modi has pushed back the Chinese. In Sri Lanka, Indian activity to encourage an opposition alliance, and minority Muslim community support for it, helped defeat a pro-China president. In Bangladesh, Chinese economic projects have been thwarted by Modi reaching out to Sheikh Hasina.

Travelling to Mongolia and calling it "an integral part of India's Act East Policy" has sent its own message. In the Indo-Pacific Modi has built bridges with a host of potential partners. Of course, there are limits to what geography will allow India to do in Mongolia and there is the reality of its current maritime capacities. Even so, Modi has played with whatever cards he has and played deftly. Primarily he has bet on the Indian economy changing gears in the coming 12 months, with the business cycle reviving. Organically and by induction, this could give him the strategic space he requires from Beijing. In that sense, his foreign policy formulation has been ahead of the curve. Now the economy needs to catch up.

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First Year of Modi Government and India's Enhanced Stature

***Alok Bansal**

The NDA government under the leadership of Narendra Modi has completed one year. This one year has seen many successful implementations especially in the field of foreign and security policies. The base for this started as early as his swearing in ceremony where he had invited the Heads of all South Asian states and Mauritius. This was the first time that all SAARC leaders were present for the swearing in of an Indian Prime Minister. The presence of such foreign leaders was projected as India's quest to take all the neighbours along. The numerous foreign trips that Modi has taken up till now along with the announcements of his foreign policies and facilities that he has created for the Indian diaspora abroad have escalated him as a leader of international stature. The presence of the leaders from South Asia and Mauritius was also an indication to the world about what India perceives as its sphere of influence.

Though a cordial invite was sent out to the Pakistan Prime Minister which was in turn accepted by him, all has not been well on the Pakistan front as far India is concerned. During the meeting of the two prime ministers, it was jointly decided that the foreign secretaries will meet to analyse the bilateral issues. Although, Prime Minister Nawaz had declined to meet the separatists during his visit to New Delhi, Pakistan's envoy continued to engage with separatists leaders from Jammu and Kashmir, much against the wishes of the Indian government. Consequently, Modi did not hesitate to cancel the talks between the two foreign secretaries. The message was very clear that there would be zero tolerance against Islamabad's influence in the country's internal affairs. There were further attempts to revive talks between the two countries but were thwarted by repeated ceasefire violations by the Pakistan Army along the border of Jammu & Kashmir. These steps by Pakistan are a direct reflection of the weakening of political leadership in Pakistan and has led to a realisation in New Delhi that seeking good relations with Pakistan at this juncture is infructuous.

In Sri Lanka, President Mahinda Rajapaksa after having won the war, was exhibiting extreme autocratic tendencies and removed every constitutional check and balance on his power. He was reneging on various promises made to the Tamil minority and India on devolution and the cordial bilateral relations between India and Sri Lanka were getting strained. The country appeared to be veering towards the Chinese, to counter Indian influence. Every small decision of the Sri Lankan government seemed to have been planned meticulously so as to please their Chinese counterparts and to make sure that their relations with China remain intact. India's view of Sri Lanka was that it was becoming more of a non-cooperative entity. This is when the Sri Lankan Presidential elections in 2015 became important to India and was a positive sign when a viable coalition defeated Rajapaksa who till then looked invincible. With Maithripala Sirisena taking up as his successor, bilateral relations with Sri Lanka have considerably improved. Also, the fear of its getting under Chinese sphere of influence has largely subsided.

The fact that during the first year of the NDA government, India engaged with 101 countries at the level of Prime Minister, External Affairs Minister and Minister of State for External Affairs itself showcases that India definitely wants to establish itself as a global player. Modi's first visits were to the countries

** The author is Director, India Foundation*

considered culturally and socially closest to India, Bhutan and Nepal. These visits were marked by high level of diplomacy and he managed to strike a sympathetic chord amongst public and established links cutting across political divide. The visits enabled India in getting significant economic gains in terms of cheap hydro power.After consolidating relations with Himalayan neighbours, he sought out countries with investible surpluses like Japan and China. Consequently, both the countries have agreed to invest large sums in India's infrastructure. There was a competition of sorts between the two as far as investments in India were concerned. There have been sensitivities as far as Chinese investments in certain sectors and areas are concerned. His visit to China was significant in that for the first time a visit to China was clubbed with other countries. More significantly, in a rare departure from protocol, he was received outside Beijing by the President Xi Jin Ping. It was also the first instance when an Indian spoke about the contentious issue of delineating the Line of Actual Control in a public forum, though China has not reacted positively, in this matter. India has also taken a clear cut stance as far as freedom of navigation in South China Sea is concerned, in direct contravention of Chinese position.

Modi's next thrust area was another region which he considers as lying within India's sphere of influence, the Indian Ocean region. His "four-nation Indian Ocean foray" was expected to bolster India's relations in the region. However, his tour was cut down only to Mauritius, Seychelles and Sri Lanka. The visit to Maldives was cancelled to give a clear signal to Maldivian leadership that India disapproved the way in which Maldives treated its former president. Maldives, Seychelles and Mauritius have traditionally received military hardware from India and their personnel have been trained in India. These island nations and their security is considered crucial for India's security and its influence on the Indian Ocean Region.

Modi has also visited those western countries from which India expects to get advanced technology and help in its "Make in India" programme, which is the lynchpin of Modi's employment generation policies. His success in getting US President Barack Obama to visit India again and be the Chief Guest at the Republic Day parade was significant, as both these were first ever for a serving US president. It also highlights the partnership between both the countries in terms of strengthening economies and strong democracies.

Modi has also the credit of being the first Prime Minister to visit Canada in 42 years after Indira Gandhi. This visit was deemed successful when a deal was signed with the Canadian Prime Minister to supply Uranium to India for electricity generation. The deal worth US$283 million was for the supply 7.1 million pounds of uranium over the next five years to cater to our nuclear reactors.

However, his biggest success has been in the field of public diplomacy. He has drawn big crowds primarily comprising of India Diaspora in most of the countries, he has visited. He has addressed the public abroad quite successfully and his speeches have managed to strike a sympathetic chord. In recent past no other leader has generated that sort of euphoria. His speeches in Nepal's Constituent Assembly and Dhaka University were exceptionally outstanding. He has managed to get a huge response both from media as well as from the public. The response of the public has been overwhelming and the favourable response to his speeches seems to come directly from their heart.

One of the roaring successes with regards to India's neighbours has been his visit to Bangladesh. Ratification of Land Boundary Agreement with Bangladesh by the Parliamentunanimously, has been one of his glaring successes in the field of foreign policy. Besides this, he has signed around 20 other pacts including the ones to boost trade, connectivity and security cooperation. India also offered $2 billion

credit facility to Bangladesh for projects in infrastructure, power, health and education.

Bangladesh is key to India's 'Act East' policy and the government will go out of its way to nurture good relations with Bangladesh. The two countries also inked pacts on the use of Chittagong and Mongla ports by which India can directly ship cargo to Bangladesh. This has the potential to transform India's North East. Agreements for renewal of better connectivity in terms of starting a trans-border bus service had also been signed. This was also the first time when an economic zone was earmarked by a neighbouring country exclusively for Indian firms in order to encourage Indian investments in Bangladesh. During his visit to Bangladesh, he also managed to bolster the regime of Sheikh Hasina, by praising the country's achievements under her regime. Continuation of Awami League government in Bangladesh is crucial for good relations with India.

India's relations with all SAARC countries barring Maldives and Pakistan have improved significantly during the last one year. Prime Minister Modi has succeeded in creating a block of Bangladesh, Bhutan, India and Nepal (BBIN) within the SAARC to promote greater connectivity and trade, in the face of Pakistani opposition to any worthwhile progress on South Asian Free Trade Area (SAFTA). This multilateral arrangement overcomes all the fears and apprehensions that are normally associated with purely a bilateral arrangement with India in its neighbours. The government now proposes to expand the BBIN network to East through Myanmar and through Myanmar to other countries of South East Asia and China.

On another front, India has successfully evacuated around 5000 people including foreign nationals from war-torn Yemen, with full cooperation from both Iran and Saudi Arabia. A massive evacuation operation was launched by the government to bring back its citizens, as well as citizens of friendly foreign countries, to safety under the guidance of Former Army Chief and Minister of State for External Affairs V. K. Singh. The operation was well coordinated and executed by the armed forces, the External Affairs Ministry and Air India. The fact that the US advised its citizens to evacuate from Yemen through Indian channels was a high point for Indian foreign policy. India also successfully managed to evacuate many of its citizens from the war zone in Iraq. It also for the first time was made a call to fight the menace of Islamic state from a global forum.

The first one year of Modi government has given clear indications of an evolving dynamic foreign policy. One of the key strands of this foreign policy has been the strong intermeshing of security and diplomatic requirements. Numerous agreements in the field of defence agreement have been signed with various countries across the globe. Important bilateral agreements which also had significant defence cooperation component have been enumerated in succeeding paragraphs.

United States

India and the United States signed a new framework agreement for closer cooperation in defence, which included a deal to jointly develop protective gear for soldiers against biological and chemical warfare, and another deal on building generators. The US Defense Secretary Ash Carter, who signed these deals on behalf of the US, also held talks with the Indian leaders to expand security ties between the countries. The United States has become one of the top sources of weapons for the Indian military, upstaging Russia in recent years, and now, under Prime Minister Narendra Modi's "Make-in-India" programme, has offered joint development and production of military technologies. Both the project on protective clothing for soldiers as well as developing the next generation power source for the battlefield will each have $1 million in funding shared equally by the two sides.The other two projects under the defense technology and

trade initiative that Dr. Carter himself launched before his elevation as Defense Secretary relate to Raven Mini-UAVs and surveillance modules for the C-130J military transport plane. India is also eyeing US aircraft launch technology for a carrier it plans to build to replace its aging British built aircraft carrier. The two sides have set up a working group to explore this cooperation.

Modi expressed hope that US companies, including those in the defence manufacturing sector, would actively participate in the 'Make in India' initiative and set up manufacturing units in India with transfer of technology and link to the global supply chain. The defence framework agreement focuses on taking "appropriate measures to enhance India's defence capability". The 10-year defence framework agreement was renewed during the visit of US President Barack Obama in January, 2015.

Australia

India and Australia established a framework for bilateral security cooperation as they stepped up their defence collaboration for advancing regional peace and combating terrorism amongst other challenges. During his visit to Australia, Prime Minister Narendra Modi and his Australian counterpart Tony Abbott held talks and agreed to establish a framework for security cooperation to reflect the deepening and expanding security and defence engagement between the two countries.They also established the framework to intensify cooperation and consultation between Australia and India in areas of mutual interest. Modi in his address to the Australian Parliament called for collaboration in the field of maritime security andstressed that the two countries should work together on seas and collaborate in international fora to work for universal respect for international law and global norms.

Modi and Abbott decided that the bilateral framework will be implemented in accordance with an action plan. According to the action plan, there will be an annual summit and foreign policy exchange and coordination.The plan includes an annual meeting of Prime Ministers, Foreign Ministers' framework dialogue, senior officials' talks led by India's Secretary (East) in the Ministry of External Affairs and the Secretary of Australia's Department of Foreign Affairs and Trade. It would also include regular meetings of the two Defence Ministers, annual defence policy talks, service-to- service engagement including regular high-level visits, annual staff talks, joint training and regular exercises and regular bilateral maritime exercises.It also calls for exploring defence research and development cooperation, including through visits by Australian and Indian defence material delegations and efforts to foster joint industry links. The action plan also includes an annual joint working group on counter-terrorism and other transnational crimes, cooperation in counter-terrorism training and exchanges between experts on countering improvised explosive devices, bomb incidents and technologies among others.

Progress under the action plan will be reviewed through established institutional arrangements, including the Foreign Ministers' framework dialogue and the Defence Ministers' meeting. Relations with Australia seemed to have reached a new high under Modi's government.

South Korea

Modi made a visit to South Korea in May 2015 as part of his three nation tour. He was there to attend the Asian Leadership Conference in Seoul where he remarked that Asia must rise as one without any regional fragments. He even assumed India's responsibility to build an inter-connected Asia. He also attended a meeting with Korea's top CEOs and invited them to be a part of Make in India.

South Korea and India agreed to step up defence cooperation while South Korea pledged $10 billion in finance for infrastructure projects. The two countries agreed to create a $1 billion economic development

cooperation fund and provide $9 billion in export credits to India. The fund will be created by South Korea's Ministry of Strategy and Finance and the Export-Import Bank of Korea.The joint deal signed by Modi and his Korean counterpart were majorly focused on defence cooperation including exchanges between South Korean and Indian shipyards, and their respective Navies.

Canada

One of Modi's other successful visits was to Canada. Sixteen commercial agreements worth 1.6 billion Canadian dollars were made between Canadian and Indian companies. These agreements will benefit a range of sectors, including aerospace, defence, education, energy, mining, infrastructure, sustainable technologies, and information and communications technology. They further demonstrate the significant growth taking place in the India-Canada bilateral commercial relationship. One commercial agreement involving Saskatchewan-based Cameco will see the company supply India with over seven million pounds of uranium over the next five years. This deal was made possible due to the India-Canada nuclear cooperation agreement negotiated by the two governments.

Modi and his counterpart Stephen Harper welcomed the progress made on negotiating a Bilateral Foreign Investment Promotion and Protection Agreement and agreed to intensify discussions to finalize the outstanding issues. Harper acknowledged that India's economic growth represented tremendous opportunities for Canadian companies. He also welcomed the announcement of visa upon arrival for Canadians.

The two countries also signed a MoU in a range of areas including civil aviation, rail regulation, education and skills development, space cooperation, and projects focused on maternal, newborn and child health. Other countries have finalised all the steps necessary for getting into an agreement for entry-into-force of the Social Security Agreement, which has come intoforce on August 1, 2015. Modi's visitto Ottawa, Toronto and Vancouver helped boost economic, social and cultural ties between India and Canada.

France

During Prime Minister Modi's visit to France, the two countries signed 17 agreements, including one on the stalled nuclear project in Jaitapur in Maharashtra. An MoU was signed between Larsen and Toubro and Areva aimed at cost reduction by increasing localisation, to improve the financial viability of the Jaitapur project.The agreement will also enable transfer of technology and development of indigenous nuclear energy industry in India. Pre-engineering agreements were inked between Nuclear Power Corporation of India Limited (NPCIL) and Areva which intend to bring clarity on all technical aspects of the plant so that all parties (Areva, Alstom and NPCIL) can firm up their price and optimise all provisions for risks in the costs of the project.

A MoU was also signed between Indian Space Research Organisation (ISRO) and French National Centre for Space Studies (CNES) on the Indo-French Megha-Tropiques satellite which was launched from the Indian launch vehicle PSLV on October 12, 2011.The MoU shall extend by two more years, the joint project for sharing and use of data from the satellite. Under space cooperation, an agreement was also signed between ISRO and CNES. The agreement proposes cooperation in the areas of satellite remote sensing, satellite communications and satellite meteorology among others.

A Memorandum of Understanding on cooperation between the Ministry of Youth Affairs and Sports and French Ministry of Sports, Youth Affairs, Public Education and Community Life was also signed that envisages cooperation and exchange of experiences in the fields of sports medicine and institutional cooperation.The two countries also signed

agreements to increase bilateral cooperation in the economic sector.

Ministry of New and Renewable Energy (MNRE) and France's Ministry of Ecology, Sustainable Development and Energy signed an MoU on cooperation in the field of renewable energy that will help establish the basis for cooperation and relationship to encourage and promote technical bilateral cooperation on new and renewable energy issues on the basis of mutual benefits and reciprocity. Other agreements in the fields of energy, culture, tourism, conservation, Ayurveda, skill development and science and technology were also signed.

The most important deal cracked between India and France was the Rafale deal. The Indian decision to buy 36 Rafale fighter aircraft in fly-way condition "as quickly as possible" bypassed the log-jammed deal for supply of 126 aircraft. For this, an inter-governmental agreement would be signed under "separate terms and conditions". The two leaders agreed to conclude an inter-governmental agreement for supply of the aircraft on terms that would be better than that conveyed as part of a separate process underway. It was agreed that the delivery would be within a time-frame that would be compatible with the operational requirement of IAF and the aircraft and associated systems and weapons would be delivered on the same configuration as had been tested and approved by Indian Air Force and with a longer maintenance responsibility by France.

Russia

BRICS 2015 held In Russia which was attended by Heads of all five BRICS countries and marked the first visit of Prime Minister Modi to Russia after taking charge in 2014. Earlier, Russian President Putin visited India during December 2014 for the 15th Annual India-Russia Summit. During the Summit both the leaders agreed upon strengthening bilateral partnership over the next decade. This partnership would cover a wide-variety of sectors and also both the leaders expressed their strong desire to make the bilateral institutional dialogue architecture more result-oriented and forward-looking. The Russian built carrier INS Vikramaditya is an example of burgeoning military cooperation between Russia and India. Modi affirmed that Russia would continue to serve as India's top most defence partner, reiterating a longstanding defence relationship.

The two sides agreed on joint production of Mil Mi-17V-5 and Kamov Ka-226 helicopters with Russian technology in India in compliance with 'Make in India' program and also fast forwarding the long pending major projects like the joint development and production of light transport aircraft.

The final design contract of fifth generation joint fighter platform Sukhoi/HAL Fifth Generation Fighter Aircraft (FGFA) is expected to be signed soon as it already lagging behind by over two years. India is also set to lease a second nuclear powered Akula-class submarine from Russia after INS Chakra which is already in service. However, before Putin's visit, apprehensions were raised about Russia's strategic goals because of the first visit by Russian Foreign Minister to Pakistan in 40 years, where Pakistan and Russia signed a defence pact for a possible sale of MI-35 attack copter by Russia to Pakistan. These developments raised concerns in the Indian strategic community as some saw this as a counter move of growing Indo-US defence collaboration. Meanwhile, Russia was quick to assure that it wouldn't do anything that will be detrimental to India's security.

Israel

Prime Minister Narendra Modi is all set to visit Israel, to become the first Indian Prime Minister to visit the Jewish country. The visit will be preceded by Foreign Minister Sushma Swaraj's visitto prepare ground for the PM's visit. The bilateral defence cooperation between India and Israel has been on an upswing and Israel has been supplying to India certain cutting edge defence technologies, including drones. The

government is keen to strengthen its relationship with Israel, without in any way compromising its relations with other countries in the region. In years to come both countries are likely to collaborate in the field of counterterrorism, and Israel's expertise in this field could easily be utilised by Indian forces.

Mauritius

Mauritius has been a crucial component of India's Indian Ocean policy and a key ally whose support has been crucial to the the international fora. India offered $500 million credit to Mauritius for infrastructure projects during the PM's visit to the island nation. The two nations signed five pacts including the one on Ocean Economy which is considered an important step in deepening the scientific and economic partnership between India and Mauritius.

The Prime Ministers of the two country agreed on the development of Agalega Island in terms of improvement in sea and air transportation facilities in the island which is considered as a major stride in India's cooperation in the field of infrastructure. India also offered to establish a second cyber city in the island nation. India had earlier helped Mauritius develop its first cyber city almost a decade ago. Mauritius decided to make India its preferential partner for building its security capabilities.

Earlier, Sushma Swaraj made her maiden trip as Foreign Minister to Mauritius on 2 November 2014 to attend the celebration of Aapravasi Divas, marking 180 years since the first Indian indentured labourers arrived in Mauritius. She had then called on President Rajkeswur Purryag and Prime Minister Navin-chandra Ramgoolam to discuss bilateral and regional issues of common interest. On top of her agenda was talk on cooperation between Indian Navy and Mauritian coast guard to ensure the safety and security of the strategically vital Indian Ocean region. In support to her stress on the importance of maritime cooperation, three major Indian war ships were docked in Mauritian waters including a destroyer INS Mumbai, a frigate INS Talwar and the fleet tanker INS Deepak.

Conclusion

It would not be inappropriate to state that foreign policy has been one of the biggest successes of Modi government. Within a year, India's credentials as a global power have been established. Prime Minister subsequently visited all Central Asian states and invited all 14 heads of South Pacific island nations to India for summit. Africa summit is expected to take place soon and all these events clearly signify that India considers itself as a global player and is no longer content with being confined to South Asia. In Prime Minister Modi, India has a popular leader whose appeal cuts across national frontiers.

Strong foreign policy has to be backed by a strong nation and consequently, the government has focussed on its security policy and security has been a key component of Indian Foreign policy under Prime Minister Modi. "Make in India" has been a key pillar of the government's policy to attain self-sufficiency and generating employment. India's dubious distinction of being the largest importer of military hardware is being leveraged to get foreign firms to invest in India to set up manufacturing facilities. An assured large order could make it fairly attractive for defence firms and could bring in numerous technologies, while nourishing hundreds of ancillary industries.

Consequently, defence cooperation has been the focus areas and many agreements to co-develop and co-produce defence hardware have been signed and will show results in days to come.

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Modi's India Build Out: Brick by Brick

***M. J. Akbar**

There is a persuasive case to be made for the proposition that good graphics equal good journalism. The content is brief, which helps clarity. The design is clean, which helps communication. The stress is on statistics, so fact prevails over interpretation. Verbiage is minimal, in the form of captions, minimising the possibility of sermons and bias. Cosmetics are missing, enabling the reader to accept content at face value, without puff and powder.

Mint is a pink newspaper, with a basic diet of business and economic news. Every newspaper has editors, and editors will have a viewpoint; so the paper has a tilt, but it is slight, and the tilt is certainly not in favour of the present Union government. On 14 August Mint published a large chart spread across two of its Berliner-sized pages that answered a simple question at the heart of so much current motivated chatter: What has the Modi government done in fifteen months?

The first block of graphics deals with financial inclusion; or, more simply, schemes to lift the poor out of poverty through financial empowerment. Item one: the Jana Dhan Yojana. "Banks have opened 17.45 crore accounts under this scheme as of 5 August" says the paper. Think about it. If, on an average, one member of a financially stressed family has opened an account, then the quantum leap in coverage within the space of months is not only unprecedented but almost unimaginable. It is an astonishing achievement, by any standards. These are, mostly, people who were only a year ago psychologically intimidated by the thought of a bank.

Recall a nodal point made by Prime Minister Modi when he announced this project on 15 August 2014: even those without any money could start an account. The objective was to incentivise the poor so that they could have a secure facility for savings as and when they had a surplus, not matter how small. The account would be a safe haven for direct transfer of benefits in the future. So far, the only option that the poor had was to keep the little leftover at home, where it was vulnerable to many forms of misuse or abuse. When the poor showed a bit of enterprise they went to chit funds, with consequences we are familiar with, given the scams that have been widely reported. Banks were nationalised in 1969 in the name of the people, but the people were missing from the story. That vacant space at the heart nationalisation has been filled.

What is the practical application beyond individual comfort? Switch now to the Prime Minister's speech from the Red Fort this year. After praising bank officials who had helped make Jana Dhan successful, the PM offered them another chance for service. There are about 125,000 bank branches across the country. If each branch could provide a soft, adequate loan for a start-up business to a Tribal, a Dalit and a woman in need, it would plant a million seeds of prosperity along the broad, undernourished base of the economic pyramid. The Prime Minister could not have taken this call if the poor did not have an account.

Sceptics were abundant when the Prime Minister began the Jan Dhan mission. They continue to sneer that more than a third of the accounts have a zero balance. They will never understand that for the poor, this is a reason for celebration, not lament. The account will not remain empty forever. Those accounts with a balance have already added, at the

**The author is Member of Parliament, Rajya Sabha and National Spokesperson, Bharatiya Janata Party*

time of writing, around Rs 20,000 crores into the banking system.

Let us move on. Till 12 August, 10.84 crore of underprivileged Indians had taken either the Pradhan Mantri Suraksha Bima Yojana or the Pradhan Mantri Jeevan Jyoti Bima Yojana. A year ago, nearly one third of India had no concept of a social security system through insurance cover; today they are part of it. Simultaneously, states have begun formalising plans for the Pradhan Mantri Awas Yojana, which will provide 20 million homes for the urban poor by 2022. The recently launched Mudra project, designed to offer inexpensive capital to 57 million small businesses [like vegetable shops on carts] has already disbursed Rs 137 crores. This will multiply. Through the Digital India Mission, Bharat Net had linked 20,000 panchayats by April against a total target of 50,000. There is much more on the achievement chart.

This is Mission Race Up, as against the Trickle Down Theory practiced during ten years of rule under Congress and its semi-defunct allies. Congress policies created wealth at the top, which had to be shared in the kind of cozy-corrupt partnerships which were exposed by CAG in the monumental scams in telecommunication and coal mines. As the phrase put it, only a trickle flowed down. To expand the metaphor, those with swimming pools got a waterfall; those dying of thirst were left to fend for themselves with a trickle.

But rising ability has to meet opportunity in order to create a productive match. The Modi economic policy is designed to create this meeting point. Here is another fact from the Mint presentations. The objective of Make in India, says the paper, is to "promote India as an important investment destination and a global hub for manufacturing, design and innovation. For this, it aims to create a conducive environment for investment, build modern and efficient infrastructure and open up new sectors for foreign investment". Good intentions, of course. How did it translate into real life? There was a "40.8% jump in foreign direct investment inflow to $23.8 billion between October 2014 and May 2015 after Make In India programme was launched. Xiaomi, Foxconn and Sony express interest to manufacture in India". A spur is being fashioned for both domestic and foreign investment. The pace may not always be even, but the destination is not in doubt. An example from one of the designated growth sectors, defence production, will suffice. Hyundai, the South Korean multinational, has been given the order for the construction of a warship, with this proviso: it has to be made in India.

The canard that nothing was being done peaked around May, during the first anniversary of NDA's assumption of power, promoted primarily by opposition parties, which, to an extent, is understand-able. What is not equally comprehensible is why some sections of media participated in the campaign. Be that as it may, the poor never bought this accusation because they began to see the change.

There is a mixture of shock, anger and disbelief on the faces of Congress, Janata Dal [U] and RJD leaders as they watch the swelling crowds at Prime Minister Modi's rallies in Bihar, and note - with apprehension - the excitement and positive response he is getting from the young. If they had only tried to analyse what the Prime Minister was doing for a nationwide economic revival, instead of being blind-sided by prejudice, they would not be so shocked now. The voters' mood in Bihar is being shaped by the Prime Minister's development agenda, which has finessed the traditional vote bank politics of caste and religion.

The message has permeated: Modi means jobs, and jobs for all. The impressive success of BJP in Madhya Pradesh and Rajasthan local body elections after Rahul Gandhi's immature and cynical use of pandemonium during the monsoon session should be a lesson to Congress and its leadership. The people

want to hear the sound of positive policy, not the screech of negativity.

Long before the recent monsoon session of Parliament, I had written in an article for the Indian Express: "Congress needs public disenchantment for its revival, and therefore will do what it can to sabotage India's growth. Congress is no longer interested in the welfare of Indians. Its only interest is the high-cost maintenance of a putative leader whose headlines emerge mainly from the jumble box of low expectations. More surprisingly, someone had been feeding Rahul Gandhi the outdated weed of pseudo-Marxism, repackaged in misleading sound bites. The politics of sulking meshes easily into the economics of despair through a corrosive formula: keep Indians poor, and then milk poverty for votes. Does Rahul Gandhi want to turn India into the wasteland that Bengal became after three decades of Marxist rule? This politics of stop, slash and burn is anathema to a youthful India which wants to build, grow and earn its way to prosperity. The people want a better life, not a permanent scowl." We are only at the beginning of a journey; there is a great deal to be done at both individual and institutional levels. The challenge is immense. The Prime Minister is not very interested in finding someone to blame for the slide he inherited; he is determined to find solutions, not alibis. He knows he must inject efficiency, pace and delivery into the existing system even as he works hard to create fresh layers that will transform the nation. This parallel approach is best illustrated by the changes being made in the banking sector, and the innovative sanction to payment banks which, once again, will provide services to those who need it most.

The Prime Minister does have one advantage. His opponents, particularly in Congress, have tended to underestimate his resilience. If they believe that they can disrupt or deflect his drive for good governance through periodic displays of mayhem, then they are deluding themselves.

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Smart City and Safe City or City Survillance Projects in India

***Cdr (Retd) Sudhir Kumar**

The Smart City Concept: (a) The smart city concept goes back to the time of invention of automated traffic lights, which were first deployed in 1922 in Houston, Texas. Leo Hollis, author of **"Cities Are Good for You"**, says the one unarguably positive achievement of smart city-style thinking in modern times is the train indicator boards on the London Underground. The concept progressed since then at a pace as related technologies kept on evolving; however, it has undergone a drastic change in last one decade due to the rise of internet connectivity (internet of things) and the miniaturization of electronics into an image of the city as an "Operating System/Centre". It had been possible with the concerted efforts of giant technology companies globally present in this market, all of whom hoped to profit from the big contracts in "Smart City Projects". In brief Smart Connected Communities deliver transformational benefits: Economic, Social and Environmental.

(b) The visionary PM of India Shri Narendra Modi ji had announced another ambitious initiative for setting up of 100 Smart Cities across India soon after he took over in May last year. It is one of the biggest programme in the world to develop infrastructure to such a large scale including the up gradation of legacy set up in old cities for providing the best world class amenities to its citizens. The project has taken of now in full swing as 98 cities have been chosen through a criterion defined and circulated to the states & UTs. The Urban Development Ministry GOI had decided that there cannot be a uniform criterion to develop smart cities as each city has a distinct social and economic fabric and then it has announced even a competition among cities to qualify and get "Smart City GOI Funds". This is against the past trend of lethargy and casual approach as the States & UTs reacted to the initiative with promptness and complete preparations and forwarded the nominations of cities in the first round with in the defined time line for the same. This reflects the new sense of urgency on the part of states and UTs to make a difference to our urban landscape," Urban Development Minister M Venkaiah Naidu told PTI. All the 100 cities being nominated as smart city will now be required to prepare "Smart City Plans" for each of them. These Plans will be evaluated in the second stage of City Challenge competition by an Apex Body in the UD Ministry.

To receive 98 nominations for Smart City mission in time after detailed evaluation of all urban local bodies in each state and UT is a remarkable achievement.

Based on this second stage evaluation, the top scoring 20 cities among the 100 will be extended financial support Rs 200 crore each during this financial year. In the next two years, 40 cities each will be selected for receiving central funding. Others will be asked to work on the deficiencies identified. The broad criteria of evaluation in the second stage of competition include credibility of smart city plans, action plan for resource mobilization, economic impact including the number of people to be benefitted and employment generation, environmental impact .He said that selection of smart cities and further sequencing of financing is being done based on an objective criteria so that only those who can really deliver are picked up given the technical, financial

**The author is VP-Strategic Operations, BD (Sales), ERM and H&S Resource*

and policy challenges involved in making 100 cities smart. In the first phase, Centre will pick 20 cities to be developed as Smart Cities and in the next two years 40 cities each will be selected for receiving central funding of Rs 500 crore in the next five years. It will generate about 05 million jobs in next 05 years.

In-view of the same, I felt that some distinct clarity is to be brought out on Smart Cities, Safe City & City Surveillance Projects in India through this article.

Before that it is also pertinent to bring it to the notice of everyone that it is not only the 100 Safe City Project for Urban Development but the AMRUT Scheme is also launched by the present GOI. The PM Shri Narendra Modi ji has asked that every MP should bring up a village as a Model Village in their constituency by the MP Fund every year so that 4000 villages could be developed in par with smart cities. So, both these schemes have been launched simultaneously so that over all development of Rural & Urban areas shall progress seamlessly in order to bring benefits to all the sections of society and they become as part of India Development.

(c)The Smart City Concept is based on the following being Smart:

The Smart Governance, Smart Security & Safety including law & order, crime control and fast track courts for speedy trials, Smart Buildings, Smart Environment including waste treatment, Smart Energy, Smart Water, Smart Transport, Smart Health including hygiene, well being & sanitation, Smart Education, Smart Jobs Opportunities, Smart Entertainment, Smart Support Infrastructure, Smart IT & Communication including use of SMACT technologies for public participation in Smart City Initiative. But the most significant aspect shall be the progressive Smart Social Development of a city keeping a pace with changing time. The smart-city is all about efficiency, optimization, predictability, convenience and security. The most important aspect is public participation in governance of the city. Let's define each:

(i) The smart governance: The entire administration of city is required to be transparent & corruption free with an accountability and equal accessibility to all, effective & optimum utilization of city resources and discharge of efficient & adequate services to its citizens in time. Hence, providing an environment where public is involved & get what they aspire in a city conveniently and feel proud of being a citizen of that city. It should also cater the best resources optimization & provisioning of an effective planning towards Disaster Management to be in place to handle any eventuality. Maximization of e-governance will ensure and drive a smart city governance to take fast decisions on public centric local issues. It will be the most important & significant to decide that what data is to be opened to the public and who hold licenses among others as entire smart governance of a city will revolve around collection of big data and its analytics at a centralized Command & Control Centre. The decisions will be taken at local level and with well established processes through which the citizens can actively participate in such decision making towards city governance.

(ii) The Smart Security & Safety: Though, this aspect shall be dealt in details at a dedicated Para below. It deals with the best law & order situation where security & safety is ensured to all the citizens and the commuters arriving at 24x7 with the best / smart traffic & crime control facilitating proactive security through monitoring at centralized command & control centre & patrolling. The rapid emergency response at any part of the city within a minimum & acceptable time frame needs to be catered. Hence, a befitting Integrated Security Design comprised of adequate / optimum resources in terms of equipments & technology along with systems involved, PCR Vehicles and trained manpower available without

shortages, should be in place as per Risk Profile and crime probability & gaps analysis in a Smart City. It should provide a pleasurable and remember able experience to the people during stay / visit in / to the city. The crime cases should be handled through fast track courts, so that justice is delivered in time. The traffic control should cater to physical handicaps and ambulance movements during any emergency. The city Threat Matrix needs to be upgraded on day to day basis. The Public participation takes priority with the use of SMACT technologies to offer suggestions / feedback with complete involvement of well being of the city as it belongs to its people.

(iii) The Smart Buildings: The buildings should be constructed / developed with LEEDS-NC / LEEDS-CS ratings & energy-efficient building designs along with retrofitting of existing buildings and provisioned them with Green Technology equipped with the smart BMS & intelligent energy management technology. These buildings will be equally accessible to the physically challenged. The smart buildings will reduce 30% of water usages, 40% of energy consumption. However, to keep these systems running, ensuring a sustainable power supply will be off prime importance. Hence, installation of independent solar power supply to the buildings shall remain a focus area in smart cities. The intelligent BMS should be able to provide a net saving of about 20-30 in its existing cost. It should have adequate fire safety equipments and refuse areas for fire fighting & evacuation and security as per risk profile. The security & safety drills catering to various emergencies and disasters needs to be conducted periodically, so that public participation could be ensured in such requirements by creating interest among them and an efficient use of civic services with a fit co-ordination. The orientation / familiarization training to the residents could be available periodically to achieve this mission. The smart city should have adequate parking's for each building, colony, market places, metro stations, hospitals, schools and public gathering / event places, so that there is no congestion on roads & public places and the disaster management initiative could be carried out without hindrance to meet out any eventuality. The green cover is provided to take care of the environment.

(iv) The Smart Environment: The cleanliness is maintained through an effective & trained conservancy service, the waste collection and treatment is carried out with the best possible means using latest technology and systems / plants in place, so that zero effect is there on the environment. The pollution is controlled through adequate measures in place with use of private vehicles optimally towards the requirement. The green belt is ensured in and around city and also in parks and road sides. The adequate amount of toilets including mobile ones at some places are erected / catered. The efforts made in this direction should be futuristic keeping the needs of next generation in mind. The roads should have pavements, Bicycle path ways and footbath for walk the way to the work / offices & markets. Intelligent watering needs to be put in place for this green cover of the city. The international standard open-data programme shall address the city issues relating to weather, pollution and noise by gathering data with use of open source and do-it-yourself (DIY) environmental sensors. Indian school education often focuses on the climate and geography of India and the world, but we never learn enough about how things work in our own city and now it shall be the part of a smart city project.

(v) Smart Energy: The use of smart grid and an effective distribution of electricity 24x7 without loses & thefts and with maximum efforts to produce & use renewable energy, hence sources are to be put in place towards the same. The smart energy technologies should make sure to have at least 30% cost savings in energy consumption. The smart &

low cost indigenous meters and demand response are put in place in such projects. The effective and safe distribution of cooking gas shall be provisioned at all the houses.

(vi) Smart Water: It is that potable / treated / drinkable water is available to the entire population in adequate amount and for the common use with optimum utilization. The waste water could be treated to use it for maintaining greenery in the city and for flushing the toilets. The adequate steps taken and facilities created towards rain water harvesting, so that city water table remains intact. The smart water use with intelligent & effective methods and the best distribution technologies to ensure zero tolerance to the wastages & theft could reduce its consumption in buildings & families. The digitized distribution of water minimizing leakages by using geographic information systems and recycling of waste water will be the key features of smart water.

(vii) Smart Transport: The smart city should cater for the adequate & effective and intelligent transportation system, real-time information sharing about traffic conditions and public transport availability for internal as well as external transit. It may have a mix of metro, CNG buses and other electric cars or CNG taxis / vehicles, so that pollution control remains under permissible limits without fail. This network of transport to be utilised optimally with the use of smart solutions and SMACT technologies. The smart transport should be able to cut down the cost of transportation by about 25-30% with optimum utilization and savings in the cost of fuel.

(viii) Smart Health: The entire citizen should have an easy access to the health facilities / hospitals at affordable price, hence, the government hospitals will be catered for the poor and common man with adequate health insurance schemes to take care of the expanses in smart cities. The efforts are made to provide gyms for the common population of the city in order to emphasise the importance of good health among citizens. The sanitation and well being resources will make a part of smart health. SMACT shall push a health advisory on your mobile.

(ix) Smart Education: All the children, 100% should have an access to the education at any level in affordable fee structure and in all the streams with adequate facility towards hostels, sports / games facilities and good quality of food at reasonable rates inside canteens of the schools, colleges, universities and other educational institutions. The skills & personality development as part of leadership programme should be in place to increase the employability of the passing out students not only in India but globally. E-learning be given maximum importance so that anyone could take supplements / add on education in their own flexible timings. Webinars & video conferences shall be made part of mentoring and refreshers.

(x) Smart Job Employment: Any smart city should create jobs for its residents commensurate to its infrastructure and facilities, so that the city becomes self sustaining. It should result in to an increase of about 10-15 % rise in employment.

(xi) Smart Entertainment: A smart city should have enough entertainment facilities to all the class of people and for all budgets in day and night meeting the requirements of its citizen what they look for and visitors aspiring for, including the senior citizens and catering towards social development. Adequate number of public parks, sports facilities, zoo and community centres needs to be created.

(xii) Smart Support Infrastructure: The support infrastructure in the form of markets / shopping malls, eateries, stadiums, public gathering places, toilets, cremation, clubs, golf course, infotainment etc needs to be created as per public demand and catering to the visitors needs.

(xiii) Smart IT & Communication: It is most important part of a Smart City Concept / Project as internet connectivity is playing the most vital role in

ensuring every area as stated above remains smart, hence, use of IT and communication will have utmost significance. The use of SMACT technologies for public participation will serve a pivot around which a smart city will function. This will ensure a big data collection.

(xiv) Smart Social Development: It shall ensure that Indian treasure in the form of its culture, heritage, family and social values, treatment towards visitors remains intact under the realm of Everything Smart. It could be a part of smart governance and as well as part of Smart Communication and use of SMACT for the public participation.

(xv) Smart Disaster Management: The smart city should have the best Disaster Management in any eventuality either in natural or manmade ones including nuclear strike.

2 An Analysis

If I go in depth and carry out an analysis of the "Smart City Concept" it revolves around internalizing the following features of "smart":

So, "You'll be able to get to work on time; there'll be a seamless travelling & shopping experience, safety through cameras & other security systems / gadgets installed and SOPs in place etc. Well, another argument I would like to offer that all these things can make a city bearable, but they don't make a city valuable. A smart city might be a low-carbon city, a city where people are paying less for water, medical treatment, electricity and other civic services / taxes or towards building maintenance services or a city that's easy to move around, or a city with jobs and housing. One message is clear that whatever a smart city might be, it will have a vast network of sensors / systems or even robots & drones amounting to millions of electronic ears, eyes and noses that will potentially generate huge amount of big data and it will be meaningful with the use of many soft wares, analytics and internet of things.

3 Smart City Projects:

It is clear now that Safe City is a subset of the Smart City Initiative .The Smart City Projects could be segregated in two categories, one as Green Field Projects and another as Brown Field Projects.

(a) Green Field Smart City Projects:

(i)The whole new cities conceived right from the scratch / planning stage, such as Songdo in South Korea, have already been constructed according to this template. Its buildings have automatic climate control and computerized access; its roads and water, waste and electricity systems are dense with electronic sensors to enable the city's brain to track and respond to the movement of residents, so saves a lot public money. In India, meanwhile, Prime Minister Narendra Modi has announced to build no fewer than **100 smart cities** on the same concept but as per Indian conditions. A forward-looking way in economy, people, governance, mobility, environment, and living, built on the smart combination of endowments and activities of self-decisive independent and aware citizens. A city that monitors and integrates conditions of all of its critical infrastructures including roads, bridges, tunnels, rail, sea-ports, subways, airways, water, power, even major buildings, climate control, can better optimize its resources towards heath & education and creation of intra city jobs, plan its preventive maintenance activities and monitor security aspects while maximizing services to its citizens right from the conceptual & planning stage. Hence, it is easy to put an architecture of a Green Field Smart City Project in place as it does not have an issue of handling the challenges of legacy infrastructure.

(ii) India is having an ongoing Green Field Smart City Project in Gujarat which was conceived by none other than our visionary Prime Minister Shri Narendra Modi when he was the CM of Gujarat and it is GIFT (Gujarat International Finance Tec) City. The Gujarat government has approached the Centre, now firmly

under its previous boss to push long-pending clearances from the ministries of finance, highways and civil aviation, so that its first phase can meet its 2014 deadline. A 50:50 joint venture between a state government undertaking and Infrastructure Leasing and Financial Services (IL&FS) Limited, the GIFT city was planned as a global financial and IT services hub spread over 886 acres near Ahmadabad airport and is expected to create a million direct and indirect jobs.

(b) Brown Field Smart City Project: Some of the attributes of such projects are reproduced as following:

(i) The "smart city creativity" arguably remains the world's established metropolises such as London, New York, Barcelona and San Francisco. Indeed, many people think London is the smartest city of them. All of them have come to the stage of Brown Field Projects as new technologies / systems have been incorporated there over a period of time as per the challenges faced by them including of legacy infrastructure. The Rio de Janeiro's centre of operations: 'a high-precision control panel for the entire city'is indeed a technology revolution in such projects. One only has to look at the hi-tech nerve centre that has been built," it is festooned with screens like a NASA Mission Control" for the city and it allows having people looking into every corner of the city, 24 hours a day, seven days a week.

Rio de Janeiro's City centre of operations

- The challenges of such smart city projects were the following:
- Interagency communication and collaboration on a massive scale.
- Interoperability of systems and technologies (open ended platforms / solutions).
- Limited budget for technology solutions.
- Accessing real time information, big data collection & use of analytics on a secure architecture to have situational awareness.
- Time taken to respond to a situation.

(ii) The Capital of South Korea, country's largest metropolis; Population of over 10 million and best known as one of the most tech-savvy cities in the world is another example of Brown Field Smart City Project. It is retaining No.1 ranking in UN e-Government Survey since 2003. The 'Smart Seoul 2015' is a people-oriented & human-centric project led by the Seoul's Metropolitan Government aiming to utilize the huge potential of Smart technologies for urban development Smart city.

(viii) The City of Baltimore is a remarkable example of a successful project demonstrating the clear benefits of a Smart+Connected community approach for government agencies worldwide but it was more towards a Safe City Concept / Project though a part of Smart City Initiative only.

4. Safe City Projects

The Safe City Project / Initiative is a subset of Smart City Project, so it can also be put in to 02 categories i.e. Green Field Project & Brown Field Project. The Safe City Initiative at Songdo in South Korea and GIFT City in India will also be the Green Field Safe City Projects. The greater challenge lies in establishing Brown Field Safe City Projects using existing legacy infrastructure and city complexities and some examples of the same are reproduced here:

(a) The City of Baltimore could also be taken as Brown Field Safe City Project which has been put in place very successfully.

(b) The City of Drancy in France used another Smart Connected community approach and achieved economic, social, and environmental benefits. But firstly it was developed as a Safe City or a City Surveillance Project.

(c) It is clear that a new set of tools and technologies now exist to help city governments manage public safety and city services, improve

management of city resources towards security & safety, share information effectively, manage data deluge, improve decision making, and collaboration, to deliver safer and more secure communities.

(d) Challenges and Objectives: The City of Baltimore & other cities in this category needed the ability to integrate existing dissimilar security technologies across multiple agencies into a common operating picture for improved across-the-board collaboration and information sharing. The City required a sophisticated solution that integrated their current and future security device investments and provided the technology to intelligently share information controlled by separate agencies. The City agencies and law enforcement wanted the ability to rapidly respond to everything from natural disasters, crime, event crowd control, traffic incidents, and more by having complete situational awareness and standard operating procedures for managing and resolving situations across agencies and organizations.

(e) Conclusion: It's great that we're developing such a focus on the critical area of Resiliency... something which can greatly benefit as a "Smarter" Cities focus. Leveraging technologies such as analytics, the intelligent operations center, and asset management will greatly enhance the work of the Chief Resilience Officer of a City and greatly help mitigate potential devastation and the loss of life. ." But the challenges also lie ahead, if an entire city has an "operating system", what happens when it goes wrong? The one thing that is certain about software is that it crashes. The smart city is just a "perpetual beta city".

5 India Perspective:

(a) It is expected that about 25-30 people will migrate every minute to the major India Cities from rural areas in search of better live hood and better life style. It is estimated that by the year 2050, the number of people living in Indian Cities will touch about 900 million. To accommodate this massive urbanization, India needs to find smarter ways to mange complexities, reduce expenses, increase efficiency and improve the quality of life in cities. Hence, the PM of India announced that India plans 100 new smart cities; hence, GOI will develop modern satellite towns around existing cities under the Smart City Programme. The GOI has allocated $ 1.2 billion for development of Smart Cities in 2014-15 budget. An investment of about $1.3 trillion will be required over next 15-20 years across areas like smart transportation, water, energy and public security & safety to build these smart cities. The GOI has also allocated $ 83 million for "Digital India" initiative in this budget and it will add NOFN (National Optic Fibre Network) & also help the smart city initiative. The PPP model is planned to be adopted to upgrade infrastructure.

(b) The Ministry of Urban Development has plans to develop 02 smart cities in each of India's 29 states and the 07 smart cities with an investment of about $185 billion being green field projects are planned to be established and come up along the 1500 kms long stretch of Delhi – Mumbai Industrial Corridor (DMIC) formed in collaboration with Japan, as a manufacturing & trading hub across six states with a total investment of about $110 Bn. The first of these 07 Smart Cities would come up in Dholera investment region in Gujarat, 110 kms away from Ahmadabad. Each city will have underground utility corridors for parking, sewage disposal and communication lines to give it a neat look and leave enough space for the facilities that are missing in most of the existing cities like pavements, parks and cycle tracks. The transportation axis is planned to discourage the use of private vehicles. The GOI has allocated $ 340 million in this budget to make 07 big cities (Delhi, Chennai, Kolkata, Mumbai, Ahmadabad,

Bangalore and Hyderabad) under "Safe City" project with a focus on technological advancements.

© It is of utmost importance and also to be seen that we need to nurture, preserve and side by side renew the urban fabric with changing time. India will be the 03rd construction market in the world by 2020 adding about 10 million houses every year now onwards and the Intelligent Building Management System towards Smart Cities will have a big role in smart city projects. The investment requirement for these Smart City Projects is huge but the savings due to smart energy, water and transportation initiatives besides less cost on BMS and other services will amount to more than the expenditure over a period of time in this decade itself and then surplus forever. It is meant as futuristic to cater to the needs of next generation. The DMIC itself is expected to double the employment opportunities, triple the industrial production and increase the export four folds over the next decade.

(d) The Smart City Kochi a joint venture between Smart City Dubai & Kerala State Government is having an ambitious smart city project under way. Similarly, the European Business & Technology Centre (EBTC) plans to establish a pilot project of "Smart City Concept" at the industrial town of Haldia in West Bengal.

(e) There is growing need that the major cities of India those are having a population more than 01 Mn should be administered in the best possible manner with the efficient utilization of its resources with smart governance towards transportation, energy and water and in discharge of its municipal services such a law & order, judiciary, medical, health, education & cleaning / sanitation with the help of public participation, intelligent operations along with an element of accountability, better crime control and top priority towards public safety & security, a fast emergency response towards an incident management, crowd control and on a larger side an advanced method to have a best mechanism of disaster management in any eventuality.

(f) Though India is having some ongoing City Surveillance Projects but the biggest is Mumbai City Surveillance Project. The city of Surat, Ahmadabad, Baroda and Gandhi Nagar have already been installed the City Surveillance Systems, mainly comprised of a CCTV network of a large number of cameras and its monitoring at a Centralized City Command Centre. Pune & Lucknow and some more City Surveillance Projects are under way in India at different phases of planning and implementation.

(g) **Challenges:** (i) There were a lot of confusion on the subject in last 05 years or so and it is still there to a very large extent and due to the same some big projects of City Surveillance could not take off in time in India. Hence, there is a need to have a lot of synergy among security professionals & risk consultants, integrators & installers, product / solution providers and OEMS & developers. It is a fact that product developers / OEMs are not the solution providers and they do not have with them the consultants / professionals on board who can draw a synergy between what is needed by the end user as per the Risk Profile of a City to mitigate, in a Safe City Initiatives and so is the case in the Smart City Projects. It is a fact that some of the well known international Consultant MNCs operating in India since long could not draw proper QRs for formulating a RFP in a City Surveillance Project as they did not have required expertise with them in this field and the same resulted in formulation of a very poor RFP document with lot of ambiguities by virtue of not understanding the complete use of technologies / solutions in the market & end user perspective and the challenges of implementation of such projects on the ground with existing legacy infrastructure in place, as a result even the biggest projects could not take off in time and derailed even after three attempts. Anyway, the problem is somehow has been sorted

out now and the Mumbai City Surveillance bid has been awarded to the competent bidder. Secondly, India's security market at present is still quite product driven and it needs to change. Therefore, many security companies are turning towards solutions or trying to enhance products for application use. "Although many vendors claim to be the solution providers, very few take a problem-centric solution approach; therefore education and promotion are needed to bridge the gap.

(ii) There are solutions in the market known as Smart Social Technology or Ecosystems / Smart Security Solutions to address some of these problem as outlined above and some are suggesting the overall smart solutions to improve the city governance with an accountability and some are suggesting only surveillance solutions with the installation of some CCTV's network and some are suggesting an integration of few of them using a some existing VMS software rather a PSIM. Hence, the holistic Smart City Solutions are not implemented through one single window in India so far. However, the GIFT City is being developed in Gujarat as a first Green Smart City Project in India and it could be the first in the World in true sense as a Green Field Smart City Project. It is being built so that it can accommodate some big businesses moving from Mumbai, Bangalore and Gurgaon. It is being conceptualized as a global business & IT hub and designed to be or above par with globally marked financial centre such as Shinjuku, Tokyo, Lujiazu, Shanghai, Paris, London Dockyard etc.

6.Conclusion:

(a) Smart City:

(i) We are progressing the first Green Field Smart City Project in India as GIFT in Gujarat, a project of about $12-15 billion in 03 phases spread out till 2025.The detailed planning based on various consultancies of the best International & National City Planners / Developers and technology solution providers have been drawn to implement it in a specific time frame, so that the best design is put in place in three phases. SMACT technologies are being planned to be used to ensure an effective & robust Smart City design comes in place.

(ii) A budget of $1.2 billion has been allocated for smart cities in the 2014-15 budgets, and under the flagship "safe city" project and the Union Ministry proposed $333 million to develop seven big cities (Delhi, Mumbai, Kolkata, Chennai, Ahmadabad, Bangalore, and Hyderabad) as Safe Cities and 07 new cities along DMIC as smart cities with a total investment of $100 billion to focus on technological advancement and automation. India can save approximately $ 40 billion every year with efficient energy management. Currently, buildings in India consume approximately 40% of total energy generated, and 20% of water, as well as 40% of carbon emissions, 30% of solid waste and 20% of water effluents. However with smart buildings, 30% of water usage, 40% of energy usage, and a reduction of building maintenance costs by 10 to 30 % can be saved.

(b) Safe City:

The majority of security integrators and product providers were till now focused on conventional solutions they were used to and their unwillingness to learn information technology and implement software products was restraining them to use PSIM which is indeed an answer to integration scale needed in Smart as well as in Safe City or City Surveillance Projects. This is a major challenge because awareness of customers may not be improved by the systems providers & integrators and such consultants involved in designing / formulating RFPs for such projects until / unless they understand the need / role of information technology, ISMS and now the use of SMACT and the aspects of IT / Network / Data Security & Cyber Security." This is the sole

reason that Mumbai City Surveillance Project could not take off for 05 years. Now, the tender is allocated and I suppose that the solution that is going to be implemented in this project will cater to the need, so that it could be enlarged & enveloped in to a "Mumbai Smart City Project" using not only the legacy infrastructure existing as of now but even the one which will come up / built by this project. A good PSIM will always offer a Value Add to these projects.

(c) For the Safe City Initiatives, the onus is on the security fraternity and homeland security professionals & industry to take on such a challenge and prove ourselves that we can handle such projects through a single vendor / window in India and address all the problems being encountered in implementation of such projects. We can draw a synergy among social technology & eco solutions and combine them with the Security & Safety solutions by use of data analytic, internet of things, cloud platforms and having required C4I2C (Centralized Command, Control, Communication and Intelligent Information Centre) to obtain desired results. The dynamic risk profiles could be drawn and solutions then designed to mitigate the same though real time monitoring & analysis of various parameters along with situational awareness, so that intelligence inputs and information flow could be channelized at a centralized place for a response either proactive or in about real time to contain loses due to any incidents. The C4I2C could handle the feed of all types of solutions being used through broad band connectivity and use of SMACT technologies. Use of social media will bring the needed public awareness and participation in this campaign. We can use news, blogs, virtual conferences, webinars, down loads, market news / bulletins, display LED boards for public information & city services and industry news to spread public awareness and safety precautions. We can bring Application Security, Bio metrics/IRIS/Facial recognition towards identity & access, draw compliance's and policies and make sure that data theft does not take place, so we need to use internet & network security tools as well as IT forensics. We need to maintain Wireless & Mobile Security and malware & hardware security. We need to make sure that the Business Continuity & disaster recovery plans of the city is in place and maintained for 24X7.There is a need that a task force to handle cyber security is added to such an effort to handle the growing security threat as well as to contain cyber crimes. So, we the homeland security industry & professionals can address such a challenge and handle such vital projects to provide Safe & Secure Cities.

(d) As India continues to boom, many who seek will find opportunity in the constantly evolving country. High hopes are held with PM Modi ji-the visionary man leading India to the way of success, with expectations for great success in the smart cities project, which will open up opportunities to give the homeland security industry a boost along with others as it needs to get on fast track scalable to the global standards beside needed thrust to the Make in India, Digital India, Clean India, Social Security and Skilling India initiatives which shall take India among top 03 economy by 2030 providing boost to all the industries & services in India.

(e) The many exhibiters / event management companies related with Security Events have held many conferences may be about 15-20 on the same theme and organized exhibitions in last 03-04 years, hence, lot of valuable discussions have generated on the subject. The ASSOCHAM, FICCI & CII have partnered with consultant agencies as knowledge partners or the solution providers to come out with some concrete recommendations / way forward to this ambitious initiative / project of GOI launched by our visionary PM of India, so that a national mission could be taken forward. I am also making an attempt through this article in the same direction please.

Jai Hind.

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Education: Looking beyond the Books

***Aaditya Tiwari**

India saw a turn in it's democracy last year when the entire nation entrusted its faith on Narendra Modi, candidate of the Bharatiya Junta Party led National Democratic Alliance. This was not a vote against United Progressive Alliance or Congress, instead a vote for building a new India. The vote of 2014 general elections was for laying the foundation stone of a nation proud of it's glorious ancient past and which is confident of India's leading role in the comity of nations. A vote by young aspirational India who wanted to move ahead and beyond the shadow of a nation crippled by 1200 years of slavery. Shri Narendra Modi in his very first speech made a significant point that he is the first Prime Minister born after India got independence. By pointing this he was merely reflecting the hopes of a country with 65% young population.

A nation which aspires to be a global leader has to be well aware of its strengths and weaknesses. If India wants to regain its place as *"Vishwa Guru"*, we need to work today on our future. It is time we re-assess our education system and make concrete changes. And it all has to start from primary education, because it is in those class rooms that our future leaders are sitting.

India had a rich tradition of gurukul system to impart education. We had centres of excellence like the Taxila, Nalanda and Vikramshila universities where apart from religious studies there was practical education in Science, Medicine, Astronomy, Philosophy etc. Even during pre-British times India had a wide network of educational institutions as shown by Dharampal (1922-2006) in his work based on Adam's report on Bihar and Bengal, Munro's report on Madras and Leitner's findings about Punjab. The education system which we primarily follow today was imposed by British government to 'create a class who may be interpreters between the British and millions whom they govern.' Even after independence stress was laid on higher education in the five year plans than fixing the problems of primary education. It would be wrong to say that we gained nothing from this approach, the huge soft power India enjoys by virtue of it's IT industry and doctors spread across the world is remarkable. But we haven't made significant strides in other fields. Not one of our universities is in top 100 global rankings. Only half of our graduates are employable according to industry reports. By ignoring the formative years of an individual we have created entire generations which have been schooled, have degrees and can speak English but whether they have an ability to think, learn, unlearn and re-learn is doubtful.

In recent past there have been attempts to fix this problem by introducing programs like Sarva Shikhsha Abhiyan, Mid-day meal scheme, development of National Curriculum Framework-2005 and Continuous and Comprehensive Education and more recently the Right of Children to Free and Compulsory Education Act or Right to Education Act (RTE), 2009. These have only succeeded in bringing the child to school. Today enrollment is as high as 96%, but they have failed when it comes to imparting quality education and checking drop out after class 5. In India today, 4% of our children never start school, 58% don't complete primary schools and 90% don't complete school. The Annual Status of Education Report (ASER) published each year by Pratham shows the state of our education. If this section of our population isn't given the adequate

**The author is Research Associate, India Foundation*

skills and appropriate education, the boon of demographic dividend will in no time transform into a bane. It is now that we need to act and that too with urgency to transform our primary education system. It is in this regard that I suggest a few changes based on my two years of experience as a teacher.

Where are the questions! Where is the Joy!

India had a rich tradition of asking questions and seeking knowledge. Upanishads themselves translate to 'sitting at the feet' meaning learning by asking. Even in the Bhagwat Gita, Arjuna seeks knowledge by posing questions to Lord Krishna. But in our schools today students are discouraged to question. Even after banning corporal punishments, it is widely practised across schools and is used to instill fear among students. Apart from this, at a young and fragile age children are over burdened with books and home work, there is no time for social interaction, to go out and play games and to climb the trees! In this competition to succeed, to be the first in the race, schools and parents are thrusting their kids with excessive information.

I think it is time primary schooling focuses more on developing the thought process of the child rather than making them human robots. Books should be introduced only after a certain class. Till then entire education should be activity based where the child is encouraged to observe, question and enquire. Here we can take lead from Neel Bagh experiments of David Horsburgh, Eklavya Project at Hoshangabad and similar other schools working on Activity Based Learning. It is time Alternative Education became mainstream.

Bye Bye Exams

Purpose of exams is to assess the child on their understanding of the subject. But most of the times they act as a deterrent, where the motivation is to not fail rather than understand and learn the subject. Exam results also create a division in the class and undermine the child's innate talent. Children should be assessed only to show the improvement they have made over their previous performance and not to certify their abilities. While the CCE does answer a lot of queries regarding assessment and evaluation, they remain more or less theoretical and are far from implementation in schools in spirit. Moreover with the 'No Detention Policy' after RTE came into effect, performance in formative assessments is merely symbolic. Instead at the end of the year there can be a detailed report by the class teacher about the child's year long performance. This report can have both qualitative as well as quantitative points. For example, instead of giving marks in Maths, the teacher can mention "Knows double digit addition or Needs to improve knowledge of Verbs!".

Value Education and Meditation in Schools

Prime Minister Narendra Modi said, "Education should become the force for nation's character building." For this government must encourage schools to take up meditation classes as it helps develop child's concentration and awareness. We need to keep alive the Indian tradition of spiritualism as it will provide a bedrock of calmness in times of material consumption.

Teacher Training Institutes

There is a Shloka in Sanskrit

अमंत्रमक्षरं नास्ति मूलमनौषधम् ।
अयोग्यः पुरुषो नास्ति योजकस्तत्र दुर्लभः।।
(there is no sound that is not a mantra, no plant that is not medicinal |
there is no person unworthy, what is lacking is an 'enabler'||)

We need teachers who are also good enablers. If we really wish to improve our education we will have to invest greatly in our teachers. For that we need state of the art teacher training institutes in all

the states and UT's of India. The task of these should be two-pronged. One wing dedicated for training and regular assessment of practising teachers. And the other wing dedicated entirely for the purpose of research to develop appropriate curriculum and pedagogy for respective states and UT's.

India can also use these institutes for exporting teachers across the world and they can act as a major soft power for us.

Engaging our Society

Only 10% of the students who enroll in primary school end up joining college. They are a huge resource available to us whose talent can be utilized through schemes like National Service Scheme where a college is asked to adopt one nearby primary school.

Also we can engage retired and serving government officials, working professionals in our schools. This can be done by making schemes where such interested persons can take a sabbatical and teach in schools. This experience will be enriching for both society and school and nurture a sense of respect for Teacher's job. This can atleast be started in central government run schools like Navodaya Vidyala and Central School.

Schools too should be active participants and pioneers in schemes like the Swachh Bharat Abhiyan or Yoga Day. If you wish to engage entire society, engage its children.

Are we over- emphasizing the importance of English language!

We have in our education system laid excessive stress on English education. While I agree with the advantages of knowing the language in today's world, we should not forget English is not the child's first language. Research worldwide shows that the child should be initially taught in his or her own mother language. Even the Section 29(2)(f) of the RTE Act mentions this. Thrusting English upon the child, creates a disconnect between what the child speaks in his family and in school. Many a times this creates lack of confidence and fear to ask questions. Moreover English or any other language can always be added as a skill later.

Utilizing available Infrastructure

Schools have huge infrastructure with them which goes largely unutilized after school hours and during holidays. School principals should be given the freedom so as to engage civil society and NGO's which want to contribute for the purpose of education but are unable to do so due to lack of infrastructure availability. This should also include building and maintaining school buildings under the Public Private Partnership model.

India is a nation of diversities, a garland with multiple flowers. Today it is brimming with young energy and it is the responsibility of our governments to streamline this energy not only for India's progress but global peace. Mahatma Gandhi in *Buniyadi Shiksha* says, "The ancient aphorism "Education is that which liberates" (*'Sa Vidya Ya Vimuktaye' from Mundakopanishad*), is as true today as it was before. Education here does not mean mere spiritual knowledge, nor does liberation signify only spiritual liberation after death. Knowledge includes all training that is useful for the service of mankind and liberation means freedom from all manner of servitude even in the present life. Servitude is of two kinds: slavery to domination from outside and to one's own artificial needs. The knowledge acquired in the pursuit of this ideal alone constitutes true study."

Swami Vivekananda always said, "Give me 100 energetic young men and I shall transform India", it is for creating such young energetic women and men that this government was voted to power. Primary Education is where the transformation should start.

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Upstart India: A Case to Complement "Make in India" with "Start in India"

***Apurv Mishra**

On 29 November 1947, just three months after India celebrated its independence, the United Nations General Assembly recommended the adoption and implementation of the Partition Plan for Mandatory Palestine to create the state of Israel. Since its inception, Israel faced acute security and economic challenges, starting with the 1948 Arab-Israeli war and the massive influx of Jewish refugees from around the world.

For a country born in such trying circumstances, Israel today has done remarkably well for itself. It ranks 19th among 187 nations on the UN's Human Development Index, which places it in the category of "Very Highly Developed" nations. According to IMF, Israel ranks 24th in the list of countries by GDP per capita and in 2010 it was unanimously invited to join OECD- an exclusive club of the world's richest countries. Although India is a very different country from Israel- for starters, Bangalore has more people than Israel- there is something to be learned from the remarkable success story of a country with such limited natural resources and surrounded on all sides by hostile nations.

The key to Israel's success has been its ability to develop itself as an innovation hub and encourage a culture of high-technology entrepreneurship to thrive in the country. Today, the largest chunk of Israel's export constitutes cutting-edge technologies in software, communications and the life sciences. It has the second-largest number of start-up companies in the world after USA and the largest number of NASDAQ-listed companies outside North America.

The policy-makers of Israel and USA realized intuitively what economists like the Nobel laureate Robert Solow have proven empirically - technological innovation is the only sustainable source of economic growth and entrepreneurship the only guarantee of sustainable competitive advantage for nations. This is why during the 1980s and 1990s, state and local governments across the United States abandoned their previous focus on attracting large manufacturing firms as the centerpiece of economic development policy and instead shifted their focus to promoting entrepreneurship[1]. And that effort has borne fruit because most of the net employment gains in USA between 1980 and 2005 came from firms younger than 5 years old[2].

While our government continues to encourage manufacturing by foreign and domestic industries under its "Make in India" programme, it must also give equal attention to nurturing the nascent culture of technology-based startups in India. We have all the right raw materials to create the next generation of high technology companies- a large pool of young population that looks favourably upon entrepreneurship[3] and a large domestic market to cater to.

The budget earlier this year was a good beginning as it announced several new schemes to encourage innovation and startups like Atal Innovation Mission (AIM) as a "promotion platform to spur scientific research and R&D in the country", Self- Employment and Talent Utilisation (SETU) mechanism which is a "techno-financial, incubation and facilitation programme to support all aspects of start-up businesses" and finally the MUDRA bank to provide

**The author is a Young India Fellow*

loan facilities to small businesses in India. Meanwhile SEBI is also carving out an easier set of rules for startups to raise funds and list themselves on stock exchanges.

However, a lot still remains to be done. Across countries, most government programs to promote startups have generally failed because they work under the assumption that as long as government provides budding entrepreneurs access to capital, they will work their magic and create the next Facebook and Google. However, as economist Russell Sobel explains: *"...capital is more mobile than labour, and funding naturally flows to those areas where creative and potentially profitable ideas are being generated. This means that promoting individual entrepreneurs is more important for economic development policy than is attracting venture capital at the initial stages. While funding can increase the odds of new business survival, it does not create new ideas. Funding follows ideas, not vice versa."*[4]

The principle that funding follows good ideas is evidenced by the fact that global interest in India's technology startups is peaking as more young entrepreneurs bite the startup bullet, especially in the field of mobile technology. Venture capital investors funnelled $2.46 billion into Indian startups this year till June, compared $2.34 billion in entire 2014[5]. The message is clear: If our system can generate good ideas, money will be available to fund them.

The public policy interventions that really work are ones that promote economic freedom and establish credible institutions that support business activity. India's rank of 142 on the World Bank's *Ease of Doing Business* index hurts the small entrepreneur much more than the large companies. Further, in the annual Global Innovation Index survey for 2014 which measures a country's innovation capabilities across 81 indicators, India slid 10 places from 2013 to be ranked 76th in the list of 143 economies around the world. Notably, it was the worst performer among all BRICS nations with all other member countries improving its position from the last year. These are the systemic problems that our government must be looking to solve, in its quest to promote startups.

The NITI Aayog has set up an Expert Committee to lay down the detailed contours of AIM and SETU[6]. While they will surely have several recommendations on removing regulatory roadblocks and improving the access to funding for startups, one hopes that they also suggest ways in which we can promote and celebrate a culture of risk taking and entrepreneurship so that more people are encouraged to try out new ideas. A good beginning would be to revisit some of the recommendations in the draft National Entrepreneurship Policy that was prepared by the Entrepreneurship Development Institute of India, Ahmedabad[7]. Also helpful would be to study how countries like Israel, Singapore and Silicon Valley in USA have nurtured innovation hubs. One possible reason for the success of these countries might be that they are amongst the largest spenders on R&D as a proportion of their GDP- in fact Israel is at the top of the list with 3.93%[8]. India meanwhile, spends less than 1%.

Finally, as a society we need to become more tolerant of failures. Despite our best efforts, India will not remain immune to the high rate of failure of startups[9] and most companies that the government and private incubators support will not make it big. Research suggests that failed entrepreneurs are far more likely to be successful in their second go-around, *provided they try again*[10]. And even entrepreneurs that fail still keep the existing players under pressure and stimulate innovation. We need to change our mind-set and realize that it is okay to fail as long as you constructively use that experience to build a better company. Only then will investors and incubators feel

comfortable investing in a failed entrepreneur.

The process of converting our youngsters from job-seekers to job-creators is a complex, long-drawn process involving coordinated action from several public and private stakeholders. At first glance, it might not be attractive to our policy-makers looking for quick wins to present before the public. But if we persevere, the payoffs for our country will be huge.

References:

[1]*http://www.econlib.org/library/Enc/Entrepreneurship.html*

[2]*Senor, Dan, and Saul Singer.*

Start-Up Nation: The Story of Israel's Economic Miracle. Toronto: McClelland & Stewart, 2011.

[3]*The Global Entrepreneurship Monitor (GEM) is the world's foremost study of entrepreneurship.GEM 2014 showed that 58% of Indian adults (18-64 years old) consider entrepreneurship a desirable career choice; around 66% think that entrepreneurs receive a high level of status and respect.*

[4]*http://www.econlib.org/library/Enc/Entrepreneurship.html*

[5]*http://economictimes.indiatimes.com/small-biz/startups/venture-capital-funds-total-to-rs-15600-crore-into-indian-startups-this-year-surpasses-inflow-in-all-of-2014/articleshow/47857896.cms*

[6]*http://niti.gov.in/content/aim.php*

[7] *http://ediindia.ac.in/e-policy/*

[8] *USA spends 2.79% and Singapore spends 2.1% on R&D as a proportion of its GDP.*

Source: http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS

[9] *On average, nine out of ten startups fail. See:http://www.forbes.com/sites/neilpatel/2015/01/16/90-of-startups-will-fail-heres-what-you-need-to-know-about-the-10/*

[10] *http://www.bloomberg.com/bw/articles/2014-07-28/study-failed-entrepreneurs-find-success-the-second-time-around.*

**This article was earlier published in the Organiser*

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India – Bangladesh Relations: Bilateralism and Beyond

The Oberoi
22-23 May 2015, New Delhi

The Sixth round of the Indo-Bangladesh Friendship Dialogue on "Bangladesh-India Relations: Bilateralism and Beyond" was organised jointly organized by the India Foundation, Friends of Bangladesh and Bangladesh High Commission in New Delhi on 22-23 May 2015 in New Delhi. The Dialogue witnessed high levels of participation from the political, media, executive and academic circles of both countries.

Day 1

Inaugural Session

The Inaugural Session took place at The Oberoi, New Delhi and began with the felicitation of the dignitaries- Capt. (Retd.) Alok Bansal, Director, Centre for Security and Strategy, India Foundation felicitated Mr. Shahriar Alam, Hon'ble State Minister for Foreign Affairs, Bangladesh; and Mr. A S M Shamsul Arefin, Secretary, Friends of Bangladesh Coordinating Chapter, Dhaka felicitated Dr. Najma Heptullah, Hon'ble Minister, Ministry of Minority Affairs, India. After this all the dignitaries present on the dais lighted the sacred lamp to mark the inauguration of the Dialogue.

The **Welcome Remarks** were delivered by H.E. Mr. Syed Muazzem Ali, High Commissioner of Bangladesh in New Delhi and Capt. (Retd.) Alok Bansal, India Foundation. Both the speakers highlighted the importance of the historic Land Boundary Agreement between the countries and contended that it was an important step in cementing the bilateral ties of both the countries.

The **Keynote Address** was delivered by the Chief Guest Shri Suresh Prabhu, Hon'ble Minister of Railways, Government of India and Director, India Foundation. He stressed on promoting the people to people relationships between the countries. He applauded the success of Government of Bangladesh in improving Human Development Indicators such as literacy rates, the issue of freedom and rights for women, implementation of family planning programmes and rural development, which the Indian government must learn from.

Mr. Shahriar Alam, Hon'ble State Minister for

Foreign Affairs, Bangladesh delivered the second **Keynote Address**. In his speech, he stressed on important issues related to national security and territorial integrity especially with respect to the North East. He said that the shape of relationship between the countries was crucial as the lives and destinies of both the countries are interlinked hence, people to people relationships should be developed.

In her remarks, the **Guest of Honour** Dr. Najma Heptullah, Hon'ble Minister, Ministry of Minority Affairs, India said that the connections between India and Bangladesh are closer than ever before and she hoped that the visit of Shri Narendra Modi, Hon'ble Prime Minister of India to Dhaka will be a successful one. The first day concluded with the **Vote of Thanks** and the presentation of gifts by Mr. A S M Shamsul Arefin to all the dignitaries present. In his speech he said that the Land Boundary Agreement has given both the countries an opportunity to go ahead and develop their relations and to fight their wars together. He also expressed his thanks to Mr. Shahriar Alam for leading the delegation to India and also thanked India Foundation and Friends of Bangladesh.

At the end the All Party Parliamentary Group from Bangladesh presented mementos to all the dignitaries present on the dais.

Day 2:

The second day of the Dialogue was held on the 23rd May, 2015 in Gulmohar Hall, India Habitat Center. The day began with the much awaited **Special Address** by Foreign Secretary of India, Dr. S. Jaishankar. Talking about the ground-breaking Land Boundary Agreement which was recently ratified, Shri Jaishankar emphasized on how the two countries share the Ganges River and are co-dependent on conserving Sunderbans. He stressed that the Bhutan, Bangladesh, India and Nepal (BBIN) sub regional group needs to co-operate and hold useful discussions at senior levels to bring about positive changes in the relations with neighbouring countries.

This was followed by three different Working Sessions. The **First Working Session**, chaired by **Shri Kiren Rijiju**, Hon'ble Minister of State for Home Affairs, Government of India, had its focus on *"Designing a dynamic security and confidence architecture for South Asia – encompassing border management, preventing Trans-National Crimes and trade in narcotic and psychotropic substances"*. The Keynote Speakers for this session were **Shri M L Kumawat,** Former DGP, Border Security Force, & Vice-Chancellor, Sardar Patel University of Police, Security and Criminal Justice, Jodhpur and **Maj Gen (Retd) Md Abdur Rashid,** Executive Director, Institute for Conflict, Law and Development Studies, Bangladesh. The Panellists who participated in the discussion were **Maj Gen (Retd) Afsir Karim**, Editor, Aakrosh Journal; **Dr Sreeradha Datta**, Director, MAKAIAS, Kolkata; **Prof. Dr. Syed Manzurul Islam**, Department of English, Dhaka University; and **Mr. Manzurul Ahsan Bulbul**, President, Bangladesh Federal Union of Journalists & Editor in Chief, Baishakhi Television, Bangladesh

The focus of the **Second Working Session** was on *"Designing intense connectivity networks through Infrastructure development – reconnecting the ancient production-trade-value-chains."* The session was chaired by **Prof. Veena Sikri**, Former High Commissioner of India to Bangladesh and **Dr Prabir De,** Professor, Research and Information System for Developing Countries, India and **Amb. (Retd.) Muhammad Zamir**, Former Chief Information Commissioner & Chairman, International Relations Committee, Bangladesh Awami League, were the lead Speakers. The Panellists for this session included **Dr Nisha**

Taneja, Professor, ICRIER, New Delhi; **Dr Smruti Pattanaik,** Research Fellow, IDSA , New Delhi; **Dr. Qazi Kholiquzzaman Ahmed,** Chairman, Governing Council & Rector, Dhaka School of Economics, Bangladesh; **Mr. Pankaj Debnath**, MP and General Secretary, Bangladesh Swechcha Sebak League, Bangladesh.

The **Third Working Session** primarily focussed on *"Designing a comprehensive water and energy security model for South Asia."* The Chair for the Session was Amb. (Retd.) **Muhammad Zamir**, Former Chief Information Commissioner, Bangladesh & Chairman, International Relations Committee, Bangladesh Awami League. It had Two main speakers namely, **Shri Sunjoy Joshi,** Director, ORF, New Delhi and **Prof. Ainun Nishat, Professor Emeritus,** BRAC University. The Panellists were **Ms. Mandakini Devasher Surie,** Senior Program Officer, The Asia Foundation; **Ms Shebonti Ray Dadwal,** Research Fellow, IDSA, New Delhi; **Mr. Abdul Wadud Dara,** Member of Parliament & Chairman, Parliamentary Standing Committee, Bangladesh; and **Dr. Qazi Kholiquzzaman Ahmed,** Chairman, Governing Council & Rector, Dhaka School of Economics.

Valedictory Session –

The session began with the speech delivered by Shri Ram Madhav, National General Secretary, Bharatiya Janata Party and Director, India Foundation. In his speech Shri Ram Madhav said that this historic Land Boundary Agreement could not have been possible without the strong will and decisiveness shown by our Hon'ble Prime Minister Shri Narendra Modi and with this agreement new heights in the relationship of the two countries will be achieved. His speech was followed by Mr. Shahriar Alam, Hon'ble State Minister for Foreign Affairs, Bangladesh in his speech said that this sixth Round of Dialogue has been the most successful one and further said that he and his delegation is going back to Dhaka with renewed enthusiasm and hope.

Shri Ajit Doval, National Security Adviser, Government of India that the Indian Prime Minister is always focussed to see what India can do in the time when its neighbouring countries are in a problem and this one year of his government has been the brightest year of relationships between the two countries and contended that both the countries are important for each other.

The **"Delhi Declaration"** was adopted, that is, the key points discussed during the two days of the dialogues were drafted and were adopted in form of a declaration.

At the end the Vote of Thanks was delivered by Mr. A S M Shamsul Arefin.

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REPORT

4th Young Thinkers Meet

Pachmarhi, 31st July to 2nd August, 2015

The 4th season of Young Thinkers Meet was organized by India Foundation in Pachmarhi, Madhya Pradesh. The purpose of the meet was to bring likeminded young thinkers on the same platform and have a discussion over issues of national and international importance. The meet was planned over three days i.e. 31st July to 2nd August, 2015. Total participation for this meet was sixty six which included participants from various walks of life namely, students from prestigious institutions, academics, entrepreneurs, professionals working in varying industries, doctors and researchers. Dignitaries included senior RSS functionaries, Shri Dattatreya Hosabale & Shri (Dr.) Krishna Gopal, senior leaders of BJP, Shri Ram Madhav and Shri M J Akbar, J&K Science & Technology Minister Shri Sajjad Gani Lone, Directors of India Foundation Shri Shaurya Doval and Shri Alok Bansal were present to guide the discussion. Hon'ble Chief Minister of Madhya Pradesh Shri Shivraj Singh Chouhan also participated in the event. The format of the meet included large group discussions followed by individual presentations.

On the eve of 31stJuly, Shri Ram Madhav informally addressed the participants and declared the meet open.

DAY 1 (August 1, 2015)

Session 1 – Shri Dattatreya Hosabale, Sah Sarkaryawah, Rashtriya Swayam-sevak Sangh

The session on the first day opened with the address of Shri Dattatreya Hosabale. He said that being a part of such meet has made him feel young and energetic. He added that being young is in mind, if we are learners then we are young, I am also here to learn therefore I am also young. He highlighted on the theme of this meet – **"The Great Indian Dream"**. Shri Dattaji appealed to every participant that they must work together and reach a common dream and realise it.

Shri Dattaji in his opening remarks pointed out

that in today's world, development has become a goal, objective and a dream. He said that development needs a proper debate, as we all want to live in a better cleaner India. We dream for India to become the *Vishwaguru*. He quoted Shri Aurobindo that 'India will rise for the world'. India and all Indians, irrespective of their background want the country to be the *Vishwaguru* i.e. a stronger, richer and healthier nation.

However, a strong economy without science and culture is dangerous. We should think of ways of how development can support culture and how to revive culture in modern age. He said that without *Sanskruti*, no development is sustainable. The humanity is at crossroads in the world and it is high time for us to spread our message of humanity to the world. He opened the session for discussion by saying that 'with the help of society and culture, we can achieve The Great Indian Dream'.

Session 2 – Shri (Dr.) Krishna Gopal ji, Sah Sarkaryawah, Rashtriya Swayamsevak Sangh

Dr Krishna Gopal started the session by throwing light on uniqueness of India which is unparalleled. He said that till 1947, it was a dream to become free. British always thought of us as a country full of hunger, we were growing in population and also number of famines crushed us heavily. From importing food grains to becoming one of the leading agricultural nations in the world, we have come ahead and it is a dream come true due to our hard work and determination. Now the world can't function without Indians working and we have worked hard to achieve all this. We still have to go far and that is our dream now, like proper food, living and education.

He put forth the following points for discussion before the group.

- *The absence of sensitivity in our society:* He raised the issue of a road accident in Mayur Vihar in Delhi where the victim was lying on the road unattended for few hours and finally died, no one came for rescue.
- *People working with fake degrees:* He mentioned the case of Bihar High Court which directed the Bihar government to suspend 2000 teachers working with fake degrees.

- *Civic sense:*
  He said that we as a society are lacking in civic sense. We often see people discharging garbage and trash at public places. He also argued about the greed of money prevailing in the society which has turned into an evil in the system. He gave examples of oxytone and artificial milk and faulty food products.
- *Missing humanity in our society:*
  He mentioned various issue like misuse of women-safety laws, need to create awareness about deeds and appealed everyone to follow a holistic approach towards life.
- *Realising and reviving the Oneness vision:*
  He insisted on finding ways to revive the vision of oneness in every walk of life in which we all treat the entire world as part of one ecosystem in which everyone peacefully coexists and respects other beings.

Session 3: Shri Shivaraj Singh Chouhan, Hon'ble Chief Minister, Madhya Pradesh

MP's popular CM Shri Shivraj Singh Chouhan extended a very warm welcome to all the dignitaries as well as participants in the hill town Pachmarhi which he referred to as "Satpura's Queen". He thanked India Foundation for choosing Madhya Pradesh as the venue for 4th Young Thinkers Meet. He introduced Madhya Pradesh to all the participants. From cultural heritage to historical places, he called upon everyone to visit Madhya Pradesh as a tourist and feel the nature and enjoy the concept of *'Átithi devo bhava'*.

He also told about the initiatives taken up by the government which turned MP from a negative growth state to a region pacing up to double digit growth, insistence to provide the physical infrastructure like road, electricity and water with the human values intact is the mantra of MP government. He counted the achievements of his government by putting up the progress report of his various schemes with the participants. Finally, Shivraj ji explained the truth of Vyapam refuting all the allegations made by media by saying that he is the whistle-blower in this case. He completed his speech by thanking Shri Ram Madhav for this great initiative of nurturing young talents and bringing them on one platform.

Session 4: Shri Sajjad Gani Lone, Science & Technology/ Animal Husbandry Minister, J&K

In course of his speech, Shri Lone traced his journey from a separatist to a Minister in the government and his view on the aspirations of the Kashmiri people. His talk was based on personal examples including the assassination of his father Abdul Ghani Lone. He mentioned how his decision to blame ISI for his father's assassination was unprecedented and set him on a new direction in his public life.

Shri Lone further described a visit to Pakistan which disillusioned him about the country's prospects. Explaining the mindset of the Kashmiri people, he said that what they expect the government to deliver most is on the issues relating to their day-to-day life. Economic well-being and development remains the central issue for the ordinary Kashmiri citizen and wished that the CM of his state could also attend public forums and give impressive statistics about the economic growth in Jammu and Kashmir as the Madhya Pradesh Chief Minister had done earlier. He described his decision to meet and support Mr. Narendra Modi and still win the Assembly elections in Handwara as a watershed moment in Kashmiri politics because till then the prevailing wisdom had been that aligning with the BJP was a political suicide. However, his decision took a personal toll as a lot of his well-wishers felt he had let them down.

Shri Lone remained convinced that economic prosperity and development was the only way to ensure Kashmir's integration with rest of the country and the current PDP-BJP government will deliver it on this agenda. Finally, he spoke about the need for media to show a balanced perspective about Kashmir and ensure that the extremist views of a small minority were not presented as the dominant view of all Kashmiris who remained patriotic Indians.

DAY 2 (August 2, 2015)

Shri M J Akbar, National Spokesperson of the Bharatiya Janata Party and Rajya Sabha MP from Jharkhand

Shri Akbar started his talk by describing the subject as follows: the silent question of whether Islamic terror can interfere with our Indian dream and our efforts to create prosperity for modern India.

In course of his talk, he traced in great depth the history of Islamist terror and mentioned that ISIS was not the first Islamic State, it was Pakistan. Then came Taliban and Boko Haram which made ISIS only the 4th Islamic State. From Pakistan to Morocco, there was an extended region of chaos where vast areas where out of control of legitimate governments due to ideological militias who had captured a power vacuum.

He elaborated that the ideology of these militias was very different from the Prophet's model of governance which was very inclusive and included a pact of peaceful co-existence with every community. A large part of the problem was created because of Pakistan's founding ideology that Islam can be the basis of nationalism whereas in the holy texts Islam has always been thought of as a brotherhood and not nationhood. Calling Pakistan a "jelly state" that always quivers he said that its possession of nuclear weapons had made the country "toxic" and today there are more Muslims dying in Pakistan than anywhere else.

Shri Akbar next elaborated on the origins of the Shia-Sunni conflict which he believed was the defining conflict of our times and was at the root of most conflicts in Middle East. A characteristic feature of Middle East states is that the state's resources are synonymous with the ruling family's resources and this trend was started by the Saudi family which converted Arabia into Saudi Arabia. As a result, militias like ISIS took advantage of a persistent conflict between the ruling family and the common people. Shri Akbar described this phenomenon of the attraction for ISIS among the common Muslims around the world as "romance of Regression in an Age of Despair".

He ended his very insightful talk with an explanation on why ISIS wants to attack India. India represents an ideological conflict between India and Pakistan that is representative of an underlying conflict between Faith Supremacy and Faith Equality. He finally explained the characteristic features of a modern state that were present in India but not in Pakistan or China: democracy, secularism, gender equality and absence of poverty.

Shri Akbar's talk was followed by a short session in which several dignitaries introduced books that are not well-known but that others should read. This was

followed by other delegates sharing some interesting books they had come across.

Next, there was an open house session in which several delegates gave suggestions on how platforms like Young Thinkers Meet could be better leveraged to create an eco-system where like-minded individuals could freely meet and discuss ideas, share thoughts and publish articles.

Presentations

Over the course of the two days, several young thinkers made presentations on topics of their choice. Their presentations were followed by a short discussion with the other participants. Some issues on which delegates presented were as follows: the role of constitution in controlling Hindu religious institutions, designing a course on polity and governance for aspiring politicians, India' stance at Paris negotiations on climate change later this year, ideas on rejuvenation of the Indian economy, Buddhist diplomacy and need for a new energy grid to achieve sustainable growth.

Conclusion

The Young Thinkers Meet finally concluded with Shri Ram Madhav, Director of India Foundation, giving closing remarks in which he remarked on the need for new and original ideas from young people. Platforms like this event were meant to allow young thinkers to interact with each other, build networks and create an ecosystem to execute their ideas. Shri Madhav also shared his views on Dalit issues which he said was not a fight for rights but a fight for self-respect. He remarked that the defining feature of Indian society was a constant striving for truth and this required constant dialogue and debate among citizens.

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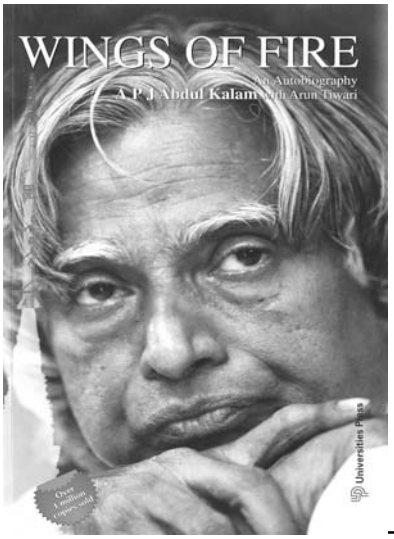

Wings of Fire - An Autobiography - APJ Abdul Kalam With Arun Tiwari

Author : A P J Abdul Kalam

Publisher : Universities Press, 1999

Price : Rs.204/-

Arun Tiwari worked under Dr APJ Abdul Kalam for over a decade.One day, while speaking to Dr Kalam, he asked Dr Kalam if he had a message for young Indians. Dr. Kalam's message fascinated him. Later, he mustered the courage to ask Dr Kalam about his recollections so that he could pen them down before they were buried irretrievably under the sands of time.

Tiwari says, writing this book has been like a pilgrimage. Through Dr. Kalam, he was blessed with the revelation that the real joy of living can be found in only one way—in one's communion with an eternal source of hidden knowledge within oneself—which each individual is bidden to seek and find for himself or herself.

It is therefore best that this book review be told in the words of Dr. Kalam himself as he saw life and its lessons.

Each individual creature on this beautiful planet is created by God to fulfil a particular role. Whatever I have achieved in life is through His help, and an expression of His will. He showered His grace on me through some outstanding teachers and colleagues, and when I pay my tributes to these fine persons, I am merely praising His glory. All these rockets and missiles are His work through asmall person called Kalam, in order to tell the several million mass of India, to never feel small or helpless.

We are all born with a divine fire in us. Our efforts should be to give wings to this fire and fill the world with the glow of itsgoodness.

I was born into a middle-class Tamil family in the island town of Rameswaram in the erstwhile Madras state. My father, Jainulabdeen, had neither much formal education nor much wealth; despite these disadvantages, he possessed great innate wisdom and a true generosity of spirit. He had an ideal helpmate in my mother, Ashiamma. I do not recall the exact number of people she fed every day, but I am quite certain that far more outsiders ate with us than all themembers of our own family put together.

We lived in our ancestral house, which was built in the middle of the 19th century. It was a fairly large pucca house, made of limestone and brick, on the Mosque Street in Rameswaram. My austere father used to avoid all inessential comforts and luxuries. However, all necessities were provided for, in terms of food, medicine or clothes. Infact, I would say mine was a very secure childhood, both materially and emotionally. The famous Shiva temple, which made Rameswaram so sacred to pilgrims, was about a ten-minute walk from our house. The high priest of Rameswaram temple, Pakshi Lakshmana Sastry, was a very close friend of my father's. One of the most vivid memories of my early childhood is of the two men, each in his traditional attire, discussing spiritual matters.

I have throughout my life tried to emulate my father in my own world of science and technology. I have endeavoured to understand the fundamental truths revealed to me by my father, and feel convinced that there exists a divine power that can lift one up from confusion, misery, melancholy and failure, and guide one to one's true place. And once an individual severs his emotional and physical bondage, he is on the road to freedom, happiness and peace of mind.

Every child is born, with some inherited characteristics, into a specific socio-economic and emotional environment, and trained in certain ways by figures of authority. I inherited honesty and self-discipline from my father; from my mother, I inherited faith in goodness and deep kindness and so did my three brothers and sister. But it was the time I spent with Jallaluddin and Samsuddin that perhaps contributed most to the uniqueness of my childhood andmade all the difference in my later life. The unschooled wisdom of Jallaluddin and Samsuddin was so intuitive and responsive to non-verbal messages, that I can unhesitatingly attribute my subsequently manifested creativity to their company in my childhood.

Samsuddin and Ahmed Jallaluddin travelled with me to Ramanathapuram to enrol me in Schwartz High School, and to arrange for my boarding there. Somehow, I did nottake to the new setting.

Once I settled down at the Schwartz High School, Ramanathapuram, the enthusiastic fifteen-year-old within me re-emerged. My teacher, Iyadurai Solomon, was an ideal guide for an eager young mind that was yet uncertain of the possibilities and alternatives that lay before it. He madehis students feel very comfortable in class with his warm and open-minded attitude.

He used to say that a good student could learn more from a bad teacher than a poor student from even a skilled teacher. During my stay at Ramanathapuram, my relationship with him grew beyond that of teacher and pupil. In his company, I learnt that one could exercise enormous influence over the events of one's own life. *Iyadurai Solomon used to say, "To succeed in life and achieve results, you must understand and master three mighty forces — desire, belief, and expectation." Iyadurai Solomon, who later became a Reverend, taught me that before anything I wanted could happen, I had to desire it intensely and be absolutely certain it would happen.*

By the time I completed my education at Schwartz, I was a self-confident boy determined to succeed. The decision to go in for further education was taken without a second thought. To us, in those days, the awareness of the possibilities for a professional education did not exist; higher education simply meant going to college. The nearest college was at Tiruchchirappalli, spelled Trichinopoly those days, and called Trichi for short.

In 1950, I arrived at St. Joseph's College, Trichi, to study for the Intermediate examination. I was not a bright student in terms of examination grades but, thanks to my two buddies back in Rameswaram, I had acquired a practical bent of mind.

I stayed on the St. Joseph's campus for four years. The lessons on subatomic physics at St. Joseph's by my Physics teachers, Prof. Chinna Durai and Prof.Krishnamurthy, introduced me to the concept of the half-lifeperiod and matters related to the radioactive decay ofsubstances. Sivasubramania Iyer, my science teacher at Rameswaram, had never taught me that most subatomic particles are unstable and that they disintegrate after acertain time into other particles. All this I was learning for the first time. But when he taught me to strive with diligence because decay is inherent in all compounded things, was he not talking of the same thing? *I wonder why some people tend to see science as something which takes man away from God. As I look at it, the path of science can always wind through the heart. For me, science has always been the path to spiritual enrichment and self-realisation.*

When I joined the B.Sc. degree course at St.Joseph's, I was unaware of any other option for higher education. Nor did I have any information about career opportunities available to a student of

science. Only after obtaining a B.Sc did I realise that physics was not my subject. I had to go into engineering to realise my dreams. I could have joined the Engineering course long ago, right after finishing my Intermediate course. Better late than never, I told myself as I made the detour, applying for admission into the Madras Institute of Technology (MIT), regarded as the crown jewel of technical education in South India at that time.

I managed to be on the list of selected candidates, but admission to this prestigious institution was an expensive affair. From MIT, I went to Hindustan Aeronautics Limited (HAL) at Bangalore as a trainee. There I worked on engine overhauling as part of a team. Hands-on work on aircraft engine overhauling was very educative. When a principle learnt in the classroom is borne out by practical experience, it creates a strange sense of excitement—a kin to unexpectedly running into an old friend among a crowd of strangers.

Two alternative opportunities for employment, both close to my longstanding dream of flying, presented themselves before me when I came out of HAL as agraduate aeronautical engineer. One was a career in the Air Force and another was a job at the Directorate of Technical Development and Production, DTD&P (Air), at the Ministry of Defence. I applied for both. The interview calls arrived from both the places almost simultaneously. Iwas asked to reach Dehra Dun by the Air Forcerecruitment authorities and Delhi by DTD&P (Air). The boy from the Coromandel Coast took a train to the North ofIndia. My destination was more than 2000 km away, andwas to be my first encounter with the vastness of my motherland.

I halted for a week in Delhi, the city of the great Sufi Saint Hazrat Nizamuddin, and appeared for the interview at DTD&P (Air). I did well at the interview. The questions were of a routine nature, and did not challenge my knowledge of the subject. Then I proceeded to Dehra Dun for my interview at the Air Force Selection Board. At the Selection Board, the emphasis was more on "personality" than on intelligence. Perhaps they were looking for physical fitness and an articulate manner. I was excited but nervous, determined but anxious, confident but tense. I could only finish ninth in the batch of 25 examined to select eight officers for commissioning in the Air Force. I was deeply disappointed. It took me some time to comprehend that the opportunity to join the Air Force had just slipped through my fingers. I dragged myself out of the Selection Board and stood at the edge of a cliff. There was a lake far below. I knew that the days ahead would be difficult. There were questions to be answered and a plan of action to be prepared. I trekked down to Rishikesh.

I returned to Delhi and enquired at the DTD&P (Air) about the outcome of my interview. In response, I was handed my appointment letter. I joined the next day as Senior Scientific Assistant on a basic salary of Rs 250/-per month. If this was to be my destiny, I thought, let it be so. Finally, I was filled with mental peace. No more did I feel any bitterness or resentment at my failure to enter the Air Force. All this was in 1958.

At the Directorate, I was posted at the Technical Centre (Civil Aviation). If I was not flying aeroplanes, I was at least helping to make them airworthy. During my first year in the Directorate, I carried out a design assignment on supersonic target aircraft with the help of the officer-incharge, R Varadharajan, and won a word of praise from the Director, Dr Neelakantan. To gain shop-floor exposure to aircraft maintenance, I was sent to the Aircraft and Armament Testing Unit (A&ATU) at Kanpur. At that time, they were involved in a tropical evaluation of Gnat Mk I aircraft. I participated in the performance assessment of its operation systems.

Three years passed, then the Aeronautical Development Establishment (ADE) was born in Bangalore and I was posted to the new establishment.

The work load at ADE during the first year of its inception was quite light. In fact, I had to generate work for myself at first, until the tempo gradually built up. Based on my preliminary studies on ground-handling equipment, a project team was formed to

design and develop an indigenous hovercraft prototype as a ground equipment machine (GEM). The team was a small working group, comprising four persons at the level of Scientific Assistant. Dr O P Mediratta, Director of the ADE, asked me to lead the team. We were given three years to launch the engineering model.

The project was, by any standards, bigger than our collective capabilities. None of us had any experience in building a machine, let alone a flying machine. There were no designs or standard components available to begin with. All we knew was that we had to make a successful heavier-than-air flying machine. We tried to read as much literature as we could find on hovercrafts, but there was not much available. We tried to consult people knowledgeable in this area, but could find none. One day, I simply took the decision to proceed with the limited information and resources available.

At that time VK Krishna Menon was the Defence Minister. He was keenly interested in the progress of our small project, which he envisioned as the beginning of the indigenous development of India's defence equipment.Whenever he was in Bangalore, he always found some time to review the progress of our project. His confidence in our ability ignited our enthusiasm. I would enter the assembly shop leaving my other problems outside, just as my father used to enter the mosque for prayer, leaving his shoes outside.

The hovercraft was christened Nandi, after the bull ridden by Lord Shiva. For a prototype, its form, fit and finish was beyond our expectation, given the rudimentary infrastructure we possessed. I told my colleagues, "Here is a flying machine, not constructed by a bunch of cranks but look at, but to fly with."Defence Minister Krishna Menon flew in the Nandi, overruling the accompanying officials' concern for his safety.

After some time I received a call from the Indian Committee for Space Research (INCOSPAR), to attend an interview for the post of Rocket Engineer. All I knew about INCOSPAR at that time was that it was formed out of the Tata Institute of Fundamental Research (TIFR) talent pool at Mumbai to organize space research in India.

I was interviewed by Dr Vikram Sarabhai along with Prof. MGK Menon and Mr Saraf, then the Deputy Secretary of the Atomic Energy Commission. As I entered the room, I sensed their warmth and friendliness. I was almost immediately struck by Dr Sarabhai's warmth. There was none of the arrogance or the patronising attitudes which interviewers usually display when talking to a young and vulnerable candidate. Dr Sarabhai's questions did not probe my existing knowledge or skills; rather they were an exploration of the possibilities I was filled with. He waslooking at me as if in reference to a larger whole. The entire encounter seemed to me a total moment of truth, in which my dream was enveloped by the larger dream of a bigger person.

I was advised to stay back for a couple of days. However, the next evening I was told about my selection. Iwas to be absorbed as a rocket engineer at INCOSPAR.This was a breakthrough a young man like myself dreamed of. Very soon after this, I was asked to proceed to America for a six month training programme on sounding rocket launching techniques, at the National Aeronautics and Space Administration (NASA) work centres.

As soon as I returned from NASA, India's first rocket launch took place on 21 November 1963. It was a sounding rocket, called NikeApache, made at NASA.

The next day, Prof. Sarabhai had a detailed discussion with us on future plans. He was creating a new frontier in the field of science and technology in India. A new generation, scientists and engineers in their 30s and early 40s, was being charged with an unprecedented dynamism.Our biggest qualifications at INCOSPAR were not our degrees and training, but Prof. Sarabhai's faith in our capabilities. After the successful launch of Nike-Apache, he chose to share with us his dream of an Indian Satellite Launch Vehicle.

Prof. Sarabhai's optimism was highly contagious.

When Prof. Sarabhai was talking to us about the Satellite Launch Vehicle (SLV), he asked me, almost in the same breath, to take up studies on a Rocket assisted take-off system (RATO) for military aircraft.The two things had no apparent connection except in the mind of this great visionary. I knew that all I had to do was to remain alert and focussed on my purpose, and sooner or later, an opportunity to do a challenging job would enter my laboratory.

The real journey of the Indian aerospace programme, however, had begun with the Rohini Sounding Rocket (RSR) Programme. What is it that distinguishes a sounding rocket from a Satellite Launch Vehicle (SLV) and from a missile? In fact, they are three different kinds of rockets. Sounding rockets are normally used for probing the near earth environment, including the upper regions of the atmosphere. While they can carry a variety of scientific pay loads to a range of altitudes, they cannot impart the final velocity needed to orbit the payload. On the other hand, a launch vehicle is designed to inject into orbit a technological payload or satellite. The final stage of a launch vehicle provides the necessary velocity for a satellite to enter an orbit. This is a complex operation requiring on-board guidance and control systems. A missile, though belonging to the same family, is a still more complex system. In addition to the large terminal velocity and on board guidance and control, it must have the capability to home onto targets. When the targets are fast-moving and capable of manoeuvring, a missile is also required to carry out target-tracking functions.

The development of Indian rockets in the twentieth century can be seen as a revival of the eighteenth century dream of Tipu Sultan. When Tipu Sultan was killed, the British captured more than 700 rockets and subsystems of 900 rockets in the battle of Turukhanahally in 1799. Hisarmy had 27 brigades, called Kushoons, and each brigade had a company of rocket men, called Jourks. The serockets had been taken to England by William Congreve and were subjected by the British to what we call 'reverseengineering' today. There were, of course, no GATT, IPRAct, or patent regime. With the death of Tipu, Indian rocketry also met its demise—at least for 150 years.

Two significant developments occurred during the work on RATO. The first was the release of aten-year profile for space research in the country, prepared by Prof. Sarabhai. This profile was not merely an activityplan laid down by the top man for his team to comply with, it was a theme paper meant for open discussions, to be later transformed into a programme. In fact, I found it was theromantic manifesto of a person deeply in love with the space research programme in his country.

The second development was the formation of a Missile Panel in the Ministry of Defence. Both Group Captain VS Narayanan from Air Headquarters and I were inducted as members. The idea of making missiles in our own country was exciting, and we spent hours on end studying the missiles of various advanced countries.

The future satellite launch vehicle (SLV) had also bee nconceived by this time. Recognising the immense socio economic benefits of space technology, Prof. Sarabhai decided in 1969, to go full-steam ahead with the task of establishing indigenous capability in building and launching our own satellites.

In 1968, we had formed the Indian Rocket Society.Soon after, the INCOSPAR was reconstituted as an advisory body under the Indian National Science Academy (INSA) and the Indian Space Research Organization (ISRO) was created under the Department of Atomic Energy (DAE) to conduct space research in the country. By this time, Prof. Sarabhai had already hand-picked a team to give form to his dream of an Indian SLV. I consider myself fortunate to have been chosen to be a project leader. Prof. Sarabhai gave me the additional responsibility of designing the fourth stage of the SLV. Dr VR Gowarikar, M R Kurup and A E Muthunayagam were given the tasks of designing the other three stages.

The RATO system was successfully tested on 8 October 1972 at Bareilly Air Force station in Uttar

Pradesh,when a high performance Sukhoi-16 jet aircraft became airborne after a short run of 1200m, as against its usual run of 2 km. We used the 66th RATO motor in the test. The demonstration was watched by Air Marshal Shivdev Singh and Dr BD Nag Chaudhury, then the Scientific Adviser to the Defence Minister. This effort was said to have saved approximately Rs 4 crores in foreign exchange. The vision of the industrialist scientist had finally borne fruit.

At the Vikram Sarabhai Space Centre, work on the SLV went on at full swing. The primary objectives of the SLV Project were design, development and operation of a standard SLV system, SLV-3, capable of reliably and expeditiously fulfilling the specified mission of launching a 40 kg satellite into a 400km circular orbit around the earth.

I took up the executive responsibility of implementing the project within the framework of policy decisions taken, the approved management plan, and the project report; and also within the budget and through the powers delegated to me by the Director, VSSC.

The SLV-3 project comprised about 250 sub-assemblies and 44 major subsystems were conceived during the design.The list of materials went up to over 1 million components.A project implementation strategy had become essential to achieve sustained viability of this complex programme of seven to ten years' duration.

We had scheduled the first experimental flight trial of SLV-3 for 10 August 1979. The primary goals of the mission were to realise a fully integrated launch vehicle; to evaluate on-board systems like stage motors, guidance and control systems and electronic subsystems; and to evaluate ground systems, like checkout, tracking, telemetry and real-time data facilities in launch operations built at the Sriharikota launch complex. The 23 metre-long, four-stageSLV rocket weighing 17 tonnes finally took off elegantly at 0758 hours and immediately started following its programmed trajectory.

Stage I performed to perfection. There was a smooth transition from this stage to the second stage. We were spellbound to see our hopes flying in the form of the SLV-3. Suddenly, the spell was broken. The second stage went out of control. The flight was terminated after 317 seconds and the vehicle's remains, including my favourite fourth stage with the payload splashed into the sea, 560 km off Sriharikota.

The incident caused us profound disappointment. I felt a strange mix of anger and frustration. Suddenly, I felt my legs become so stiff that they ached. The problem was not with my body; something was happening in my mind. The premature death of my hovercraft Nandi, the abandoning of the RATO, the abortion of the SLV-Diamont fourth stage—all came alive in a flash, like a long-buried Phoenix rising from its ashes. Over the years, I had somehow learned to absorb these aborted endeavours, had come to terms with them and pursued fresh dreams. That day, I re-lived each of those setbacks in my deep despondency.

Dr Brahm Prakash helped me endure this difficult period.On 17 July 1980, 30 hours before the launch of the second SLV-3, the newspapers were filled with all kinds of predictions. One of the newspapers reported, "The Project Director is missing and could not be contacted." I knew that the nextday's launch was going to decide the future of the Indian space programme. In fact, to put it simply, the eyes of the whole nation were on us.

In the early hours of the next day, 18 July 1980—at 0803 hrs to be precise, India's first Satellite Launch Vehicle, SLV-3 lifted off from SHAR. At 600 seconds before takeoff, I saw the computer displaying data about stage IVgiving the required velocity to the Rohini Satellite (carried as payload) to enter its orbit. Within the next two minutes, Rohini was set into motion in a low earth orbit. I spoke, in the midst of screeching decibels, the most important words I had ever uttered in my life, "Mission Director calling all stations. Stand by for an important announcement. All stages performed to mission requirements. The fourth stage apogee motor has given the required velocity to put Rohini Satellite into orbit". There were happy cries everywhere. When I came out of the Block House, I waslifted onto the shoulders of my

jubilant colleagues and carried in a procession.

The whole nation was excited. India had made its entry into the small group of nations which possessed satellite launch capability. Within a month of the SLV-3 success, I visited the Nehru Science Centre in Bombay for a day, in response to aninvitation to share my experiences with the SLV-3. There, I received a telephone call from Prof. Dhawan in Delhi, asking me to join him the next morning. We were to meet the Prime Minister, Mrs Indira Gandhi.

Prof. Dhawan and I arrived at the Parliament House Annexe the next morning. Suddenly, I saw Shrimati Gandhi smiling at me as she said, "Kalam! We would like to hear you speak."I was surprised by the request as Prof.Dhawan had already addressed the gathering. Hesitantly, I rose and responded, "I am indeed honoured to be in this great gathering of nation-builders. I only know how to build a rocket system in our country, which would inject a satellite, built in our country, by imparting to it a velocity of 25,000 km per hour." There was thunderous applause. I thanked the members for giving us anopportunity to work on a project like the SLV-3 and prove the scientific strength of our country.

In January 1981, I was invited by Dr Bhagiratha Rao of the High Altitude Laboratory (now the Defence Electronics Applications Laboratory (DEAL)), Dehra Dun to give a lecture on the SLV-3. The renowned nuclear scientist, Prof. Raja Ramanna, whom I had always admired, and who was then the Scientific Adviser to the Defence Minister, presided over the gathering.

The first thing that struck me when I met Prof. Ramanna was his genuine pleasure at meeting me. There was an eagerness in his talk, an immediate, sympathetic friendliness, accompanied by quick, graceful movements. He did not take long to come to the point. The Devil Missile programme had been shelved in spite of tremendous achievements made the team at DRDL. The entire programme of military rockets was reeling under a persistent apathy. The DRDO needed somebody to take command of their missile programmes which had been stuck at the drawing board and static testbed stages for quite a while. Prof. Ramanna asked me if I would like to join DRDL and shoulder the responsibility of shaping their Guided Missile Development Programme(GMDP). Prof.Ramanna's proposal evoked a mixture of emotions in me.

I felt honoured by the esteem in which Prof. Ramanna held me. He had been the guiding spirit behind the Pokharan nuclear test, and I was thrilled by the impact he had helped create on the outside world about India'stechnical competence. I knew I would not be able to refuse him. Prof.Ramanna advised me to talk to Prof.Dhawan onthis issue so that he could work out the modalities of my transfer from ISRO to DRDL.

Republic Day, 1981 brought with it a pleasant surprise. On the evening of 25 January, Mahadevan, Secretary to Prof. UR Rao, rang up from Delhi to inform me about the Home Ministry announcement about the conferment of the Padma Bhushan award on me. The next important call was from Prof. Dhawan to congratulate me. I felt blissfully elated as it was from my guru. I rejoiced with Prof. Dhawanat his receiving the Padma Vibhushan and I congratulated him wholeheartedly. I then rang up Dr Brahm Prakash and thanked him. Dr Brahm Prakash chided me for the formality and said, "I feel as if my son has got the award." I was so deeply touched by Dr Brahm Prakash's affection that I could no longer keep my emotions in check.

I joined DRDL on 1 June, 1982. Very soon, I realized that this laboratory was still haunted by the winding up of the Devil missile project.

In order to accelerate the pace of R & D activities at DRDL, it was imperative that decisions on vital scientific, technical and technological problems be taken quickly. Throughout my career I had zealously pursued openness in scientific matters. I had seen from very close quarters the decay and disintegration that go with management through closed-door consultations and secret manipulations.

I always despised and resisted such efforts. So the first major decision which we took was to create a forum of senior scientists where important matters could be discussed and debated as a collective endeavour. Thus, a high level body called the Missile Technology Committee was formed within DRDL. The concept of management by participation was evoked and earnest efforts were made to involve middle-level scientists and engineers in the management activities of the laboratory.

I longed to revive my buried dream of a Re-entry Experiment Launch Vehicle (REX). I persuaded my colleagues to take up a technology development project to generate data for use in the design of heat shields. These shields were required for building up capability to make long range missiles in the future.I made a presentation in the South Block. The presentation was presided over by the Defence Minister of the time R Venkataraman, and attended by the three Service Chiefs. In the end, we were asked by Defence Minister Venkataraman to meet him in the evening, about three hours later.

When we met Defence Minister Venkataraman and showed him our revised proposal, he was visibly pleased.The proposal of the missile development project had been turned overnight into the blue print of an integrated programme with far-reaching consequences. It would have wide-ranging technological spinoffs, and was exactly what the Defence Minister had had in mind. Notwithstanding the great respect I had for the Defence Minister, I was not really sure if he would clear our entire proposal. But he did. I was absolutely delighted!

The Defence Minister put up our proposal before the Cabinet and saw it through. His recommendations on our proposal were accepted and an unprecedented amount of Rs.388 crores was sanctioned for this purpose. Thus was born India's prestigious Integrated Guided Missile Development Programme, later abbreviated to IGMDP.

When I presented the government sanction letter before the Missile Technology Committee at DRDL, they were enthused with fire and action. The proposed projects were christened in accordance with the spirit of India's self reliance.Thus the Surface-to-Surface weapon system became Prithvi ("the Earth") and the Tactical Core Vehicle was called Trishul (the trident of Lord Shiva). The Surface-to-Air area defence system was named as Akash ("sky")and the anti-tank missile project Nag ("Cobra"). I gave the name Agni ("Fire") to my long cherished dream of REX. Dr Arunachalam came to DRDL and formally launched the IGMDP on 27 July 1983. It was a great event in which every single employee of DRDL participated.

The launch of the IGMDP was like a bright flash on the Indian scientific firmament. Missile Technology had been considered the domain of a few selected nations in theworld. People were curious to see how, with what India had at that point of time, we were going to achieve all that was promised. The magnitude of the IGMDP was reallyunprecedented in the country and the schedules projected were quite quixotic by the norms and standards prevailing in the Indian R&D establishments.

During this period, the most important task before me was the selection of the Project Directors to lead individual missile projects. We had a very large pool of talent. In fact, it was a market of plenty. The question was whom to pick—a go-getter, a planner, a maverick, a dictator or a teamman? I had to get the right type of leader who could clearlyvisualize the goal, and channelise the energies of his team members who would be working at different work centres in pursuit of their own individual goals.

I wanted men who had the capability to grow with possibilities, with the patience to explore all possible alternatives, with the wisdom to apply old principles to new situations; people with the skill to negotiate their way forward. I wanted them to be accommodating, to be willing to share their power with others and work in teams, delegating good jobs, assimilating fresh opinions, respecting intelligent people, and listening to wise counsel.They would have to be able to sort out things amicably, and take responsibility for slip-ups. Above all, they should be

able to take failure in their stride and share in both success and failure.

My search for someone to lead the Prithvi project endedwith Col VJ Sundaram who belonged to the EME Corps of the Indian Army.

The young engineers, 280 to be precise, changed the dynamics of DRDL. It was a valuable experience for all of us. We were now in a position to develop, through these young teams, a re-entry technology and structure, amillimetric wave radar, a phased array radar, rocket systems and other such equipment.

Work on Prithvi was nearing completion when we entered 1988. For the first time in the country, clustered Liquid Propellant (LP) rocket engines with programmable total impulse were going to be used in a missile system to attain flexibility in pay load range combination. Now, besides the scope and quality of the policy decisions Sundaram and I were providing to the Prithvi team, the project's success depended on creative ideas being converted into workable products and the quality and thoroughness of the team members' contribution.

Prithvi was launched at 11:23 hrs on 25 February 1988.It was an epoch-making event in the history of rocketry in the country. Prithvi was not merely a surface-to-surface missile with a capability of delivering a 1000 kg conventional warhead to a distance of 150 km with an accuracy of 50 meter CEP

The accuracy of a missile is expressed in terms of its Circular Error Probable (CEP). This measures the radius of a circle within which 50 per cent of the missiles fired will impact.

Indian core competence in rocketry has been firmly established again, beyond any doubt.

The Agni team was comprised of more than 500 scientists. Many organizations were networked to undertake this huge effort of launching Agni. Involvement, participation and commitment were the keywords to functioning. Each of the team members appeared to be performing by choice. The launching of Agni was the common stake not only for our scientists, but for theirfamilies too.

The Agni launch had been scheduled for 20 April 1989. We had to abort the launch. The missile had to be opened up to replace the on-board power supplies.The press was up in arms, and fielded various interpretations of the postponement of the flight to suit the fancies of their readership. Cartoonist Sudhir Dar sketched a shopkeeper returning a product to the salesman saying that like Agni it would not take off.

After a detailed analysis conducted virtually around the clock for the next ten days, our scientists had the missile ready for launch on 1 May 1989. But, again, during the automatic computer checkout period at T10 seconds, a Hold signal was indicated. A closer inspection showed that one of the control components, S1-TVC was not working according to the mission requirements. The launch had tobe postponed yet again. Now, such things are very common in rocketry and quite often happen in other countries too. But the expectant nation was in no mood to appreciate our difficulties. The Hindu carried a cartoon by Keshav showing a villager counting some currency notes and commenting to another, "Yes, it's the compensation for moving away from my hut near the test site—a few more postponements and I can build a house of my own...".

Finally, the launch was scheduled for 22 May 1989. The previous night, Dr Arunachalam, Gen KN Singh and I werewalking together with the Defence Minister KC Pant, who had come to ITR to witness the launch. It was a full-moonnight, it was high tide and the waves crashed and roared, as if singing of His glory and power.

Agni took off at 0710 hrs. It was a perfect launch. The missile followed a textbook trajectory. All flight parameters were met. It was like waking up to a beautiful morning from a nightmarish sleep. We had reached the launch pad after five years of continuous work at multiplework centres. We had lived through the ordeal of a series of snags in the last five weeks. We had survived pressure from everywhere to stop the whole thing. But we did it atlast! It was one of the greatest moments of my life.

In today's world, technological backwardness leads to subjugation. Can we allow our freedom to

be compromised on this account? It is our bounden duty to guarantee the security and integrity of our nation against this threat. Should we not uphold the mandate bequeathed to us by our forefathers who fought for the liberation of our country from imperialism? Only when we are technologically self-reliant will we able to fulfill their dream.

On Republic Day 1990, the nation celebrated the success of its missile programme. I was conferred the PadmaVibhushan along with Dr Arunachalam. Two of my othercolleagues—JC Bhattacharya and RN Agarwal—were also decorated with the Padma Shree awards. It was the firsttime in the history of free India that so many scientists affiliated to the same organization found their names on the awards list.

I sat alone for a while in silent contemplation. The sand and shells of Rameswaram, the care of Iyadurai Solomon in Ramanathapuram, the guidance of Rev. Father Sequeira in Trichi and Prof. Pandalai in Madras, the encouragement of Dr Mediratta in Bangalore, the hovercraft ride with Prof. Menon, the pre-dawn visit to the Tilpat Range with Prof.Sarabhai, the healing touch of Dr Brahm Prakash on theday of the SLV3 failure, the national jubilation on the SLV-3 launch, Madam Gandhi's appreciative smile, the post-SLV-3 simmering at VSSC, Dr Ramanna's faith in inviting me to DRDO, the IGMDP, the creation of Research Centre Imarat (RCI), Prithvi, Agni...aflood of memories swept over me. Where were all these men now? My father, Prof. Sarabhai, Dr Brahm Prakash? Iwished I could meet them and share my joy with them. I felt the paternal forces of heaven and the maternal and cosmic forces of nature embrace me as parents would hug theirlong-lost child. I scribbled in my diary:

Away! fond thoughts, and vex my soul no more!
Work claimed my wakeful nights, my busy days
Albeit brought memories of Rameswaram shore
Yet haunt my dreaming gaze!

This is the story of the period ending with the first Agnilaunch—life will go on. This great country will make enormous strides in all fields if we think like a united nation of 900 million people. My story—the story of the son of Jainulabdeen, who lived for over a hundred years on Mosque Street in Rameswaram island and died there; the story of a lad who sold newspapers to help his brother; the story of a pupil reared by Sivasubramania Iyer and Iyadurai Solomon; the story of a student taught by teachers like Pandalai; the story of an engineer spotted by M G K Menon and groomed by the legendary Prof. Sarabhai; the story of a scientist tested by failures and setbacks; the story of a leader supported by a large team of brilliant and dedicated professionals. This story will end with me, for I have no belongings in the worldly sense. I have acquired nothing,built nothing, possess nothing—no family, sons, daughters.

I am a well in this great land
Looking at its millions of boys and girls
To draw from me
The inexhaustible divinity
And spread His grace everywhere
As does the water drawn from a well

I do not wish to set myself up as an example to others, but I believe that a few readers may draw inspiration and come to experience that ultimate satisfaction which canonly be found in the life of the spirit. God's providence is your inheritance. The bloodline of my great-grandfather Avul, my grandfather Pakir, and my father Jainulabdeen may end with Abdul Kalam, but His grace will never cease, for it is Eternal!

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17 SEPTEMBER 2015
HOTEL TAJ PALACE, NEW DELHI

India Foundation in collaboration with International Chamber of Commerce (ICC)is organising **India Economic Conclave, 2015** on 17 September, 2015 at Hotel Taj Palace, New Delhi.

ICC is the world business organization, whose mission is to promote open trade and investment and help businesses meet the challenges and opportunities of an increasingly integrated world economy.

ICC's global network comprises over 6 million companies, chambers of commerce and business associations in more than 130 countries.

India Economic Convention attracts experts and stalwarts from all across the world to discuss how Indian economy can be wired for sustainable growth. The convention promises to be the premier economic event in the country.

ORGANISING COMMITTEE

Chairman

- **SURESH PRABHU**, Union Minister of Railways

Members

- **NIRMALA SITHARAMAN,** Union Minister for State for Commerce & Industry
- **JAYANT SINHA,** Union Minister of State for Finance
- **MJ AKBAR,** Director, India Foundation
- **BIBEK DEBROY,** Permanent member, NITI Aayog
- **ASHISH CHOUHAN,** Managing Director and CEO, BSE
- **TERRY MCGRAW,** Chairman, International Chamber of Commerce
- **SUNIL BHARTI MITTAL,** Vice Chairman, International Chamber of Commerce
- **SANDIP SOMANY,** President, ICC India
- **PRASHANT MODI,** Vice President, ICC India
- **JOHN DANILOVICH,** Secretary General, International Chamber of Commerce
- **SHAURYA DOVAL,** Director, India Foundation

3rd International Dharma-Dhamma Conference on
HARMONY OF RELIGIONS: WELFARE OF HUMANKIND
24-26 OCTOBER 2015
Indore, Madhya Pradesh

The Centre for Study of Religion and Society (CSRS) of India Foundation is organising the **3rd International Dharma-Dhamma Conference on 24-26 October, 2015** at **Indore,** Madhya Pradesh. The Conference is being organised in collaboration with the Department of Culture, Govt. of Madhya Pradesh and Sanchi University of Buddhist-Indic Studies (SUBIS), Madhya Pradesh as part of a series of five conferences that Madhya Pradesh government is organising on the occasion of the Kumbh Mela at Ujjain in 2016.

The central theme of the third conference will be **"HARMONY OF RELIGIONS: WELFARE OF HUMANKIND"**. The Conference aims to focus on the harmony of all religions and the usefulness of religion for individual, social and cosmic well being. Its central premise is to bring about solidarity, peace, prosperity and welfare in the world through the agency of religion. This Conference seeks to explore shared values among different religions of the world.

SCOPE

This Conference will explore the following subjects:

1. Global Peace
2. Environment & Nature
3. Human Dignity
4. Pluralism
5. Moral & Spiritual values

SUGGESTED THEMES

1. Religion as a means of global peace
2. Role of religion in ecological balance
3. Religion promoting gender equality
4. Religion to safeguard human dignity
5. Religion to ensure social justice
6. Religion propagating moral and spiritual values
7. Religious pluralism
8. Development of Yogic traditions in different religions.
9. Significance of knowledge in religion.
10. Religion and social service

Rajesh Gupta
Convenor

S. R. Bhatt
Convenor

Please visit our website www.indiafoundation.in for details on registration