

# INDIA BEYOND 2020 CHALLENGES & OPPORTUNITIES

DIGITAL CONFERENCE



## DR. M. S. VIJAYA RAGHAVAN

Former Advisor & Ex-Office Special Secretary  
to the government, Prime Minister Office

## INDIA OPPORTUNITIES

**Dr. M. S. Vijayaraghavan** started his address with these words:

“According to me Vision 2020 is not only a perfect vision by medical standards but also a perfect path to developed India through technology route.”

He then highlighting about the present situation added that, the entire globe is facing unprecedented challenge due to the pandemic and he asks that should this situation be converted into an opportunity to propel the country towards such a developed India?

Then, moving towards his main topic, Dr. Vijayaraghavan has put forth numerous facts as follows:

To his words, “By the year 2000, national documents like Technology Vision 2020 were rolled out for implementation.

# INDIA BEYOND 2020

## CHALLENGES & OPPORTUNITIES

### INDIA OPPORTUNITIES

This document laid down the road map to economic growth and wealth creation through integrating resources. Simultaneously the then Defence Minister Mr. George Fernandus, on the advice of Dr. Kalam (the then Scientific Advisor to the Defence Minister) constituted a national team from industry, National Research Laboratory and academia to strategise national security from the prism of technology and worked out a plan for implementation by the year 2020. This team under the leadership of Shri. R. Gopalswami (former CMD of Bharat Dynamics Limited) and with me as a member secretary brought out a document integrated strategies, technologies and missions for comprehensive national security in August 1998. The concept of National Security elaborated in the document resulted in the birth of India's National Security Council in November 1998 headed by the Prime Minister with the ministers of Home, Defence, Finance and External Affairs. This document laid down the map for wealth protection tech strategies through the instrument of technology integrating again the national strength scattered across India's numerous institutions in both government and private sectors as well as in academia. These documents (which Dr. Kalam was instrumental in creating) lays down the path for Developed India where wealth is not only created but also produced in equal measures integrating national resources and using instrument of technology.

Technology was chosen because it has duel use. This tool has

# INDIA BEYOND 2020

## CHALLENGES & OPPORTUNITIES

### INDIA OPPORTUNITIES

the ability to create wealth and alleviate pain of the people while at the same time protect hard earned wealth. When Dr. Kalam was made the Principal Scientific Advisor to the Govt. Of India and when both me and Shri. Rajan moved almost together to the office of PSA, one of earliest task was to integrate these documents and the outcome was India Millennium Mission (IMM 2020). For developed India that while creating wealth can protect it as well in equal measure. Either you call it Yogashemam as in Bhagavat Gita or Neengatha Selvam as mentioned in Aandals Thirupavai, India's Millennium Mission 2020 is a technology equivalent for these two immortal words.

The original IMM 2020 was a massive programme with multiple missions and within each of it there were multiple projects. Also different programmes had different departments that would pilot them. The common thread that runs across the entire IMM 2020 is wealth generation together with wealth protection. The scaled breadth and scope of IMM 2020 was such that the bureaucracy of that time had difficulty in understanding its basic structure and in respect of few of those who understood they were not keen to enter uncharted territory. As per the administrative structure, all initiatives of the office of PSA, are to be routed through the department of Science and Technology for allocations from the consolidated fund and IMM 2020 had to follow this route. But in the case of IMM 2020 it met additionally with the

# INDIA BEYOND 2020

## CHALLENGES & OPPORTUNITIES

### INDIA OPPORTUNITIES

resistance of the then SNT Minister. Finally, a truncated IMM 2020 with six missions were approved as a final scheme in the financial year 2000-2001 to be implemented by TIFAC. One of these six missions under IMM 2020 is mission REACH.

The objective of this mission is to orient higher technical education to be relevant to industry with industry in the driver seat while government providing total support to facilitate such a structure. As with every other IMM 2020 missions, here again technology is for wealth creation and for protection continued to drive identification of subjects by industries and academia together where centres of relevance and excellence core would be established in higher technical institutions across the country which industry and govt. support. It is relevant to mention here two subject areas of advanced computing and information processing and cyber security. TIFAC cores were established in Sastra and Amrita Universities respectively. A supercomputer with a peak performance of 16 gigaflops per second was set up at Sastra University in Thanjavur.

Any super computing technology is useful to applications such as weather forecasting, aerospace design, drug design and so forth in the service of wealth creation and removing people's pain. Another core in Cyber Security was set up at Amrita University Campus in Coimbatore with the support of industries such as HP India. The mandate of this centre is to

# INDIA BEYOND 2020

## CHALLENGES & OPPORTUNITIES

### INDIA OPPORTUNITIES

comprehensively address various aspects of Cyber Security both from the perspective of a defender as well as an attacker. Several unique tools, platforms and systems were acquired for carrying over both research and teaching activities which attracted talented and enthusiastic faculty and students alike to this centre.

The Wuhan Virus named Covid 19 has been declared pandemic by WHO. The impact of this small organism in every sphere of human activity be it social, financial or business is to say the least unprecedented. Beginning with lifestyle changes, financial losses, due to prolonged closure of business activities and the manner in which business has started functioning all point towards a new environment in the coming days. These changes throw off both challenges and opportunities. Way back in 1998, Dr. Kalam converted the huge challenge imposed on India by Technology sanctions and control regimes into opportunities to make huge inroads into areas such as parallel computations, carbon carbon composites, semi-conductor chip fabrication etc. Taking cue from Dr. Kalam the current challenges also await conversion into opportunities by us. Let us briefly look at some of the challenges directly attributable to Covid 19. Let us begin with social changes which have caused huge surge in online activities with lockdown being enforced, e-commerce has grown leaps and bounds and so are banking, entertainment, education, learning, religious and other

# INDIA BEYOND 2020

## CHALLENGES & OPPORTUNITIES

### INDIA OPPORTUNITIES

activities all of which have pushed up bandwidth by leaps and bounds.

Social medium like facebook, twitter, whatsapp, instagram, tik-tok and so forth are the main channel of communication in the absence of print media and opinionated visual media. Even the mom and pop stores have started using social network mediums such as whatsapp to take orders. The businesses due to closure have switched over to work from home. All meetings, conferences etc both in government and outside has switched over to the virtual mode. Instances of rampant use of telemedicine in healthcare sector have become routine which further pushes bandwidth needs along with storage space. The common thread that runs across all these instances sighted mentioned here is unprecedented surge in bandwidth and huge increasing risk due to cyber security challenges.

Challenges such as personal information leakage to cyber criminals, potential delays in cyber attack detection, new modulars unheard of before such as XSS that is delivered under the garb of digital corona virus infection kit using legitimate interactive map, emergence of infodemics where pages and posts claiming to have found medical solutions or those capable of creating mass hysteria among public and causing panic as well as disturbing religious harmony or racism misinformation and so forth or challenges that were

# INDIA BEYOND 2020

## CHALLENGES & OPPORTUNITIES

### INDIA OPPORTUNITIES

not witnessed in such a magnitude as we see now during the pandemic. As now, these are not enough. We have additionally cyber attacks in the form of bombing during conference calls, targeting of individuals or children through an unauthorised entry in online activities for extortion have picked a momentum since the beginning of February this year. Further making full use of choking of bandwidth due to surge in online activities criminals have increased. There are several publically unreported instances of such cyber attacks in the BFSI sector. Indian health sector is waiting on the wings to get attacked by cyber criminals who can leak out medical data to both state and non state actors and including the drug companies.

While these challenges are tall and formidable, they can be converted to opportunities and as Dr. Kalam showed us way back in 1998. This is the time for India to display leadership position in cyber security which is huge software power and young demography. People familiar with cyber security would know that the best innovative minds in cyber security are to be found in our middle and high schools and several times with children having no formal education. Several innovative products and services in the area of cyber security can be rolled out during this time. Likewise, it is a time for corporates to tweet their business continuity plans and bring out a revised risk assessment and management of critical processes factoring pandemics and consequent disruption of

# INDIA BEYOND 2020

## CHALLENGES & OPPORTUNITIES

### INDIA OPPORTUNITIES

critical elements of supply chain. In addition both corporate and central critical information infrastructure asset holders should revisit the cyber security posture and consider outsourcing of non critical business functions such as cyber security operations. In April 2020, PWC was engaged by Data Security Council of India under NASSCOM and MIT (Ministry of Information and Technology) together to study post Covid business as well as market in India for cyber security.

As per further finding the market would live up to US dollars 3.02 billion by 2022 from the present US dollar 1.98 billion with a compounded annual growth rate of 15 % that's huge. The government and BFSI would be the top sectors for expenditure in cyber security. Within cyber security it would be the data protection contributing roughly 22.2% and end point security contributing 19.1% that would dominate the product and service segment within the vertical. When look through the prism of global regulatory measures such as GDPR, HIPAA HITRUST etc and Indian data protection laws being expedited. Cyber security products and services is capable of supporting Indian economic recovery. I cannot resist coming back to refer Kalam while concluding my presentation. Thus, cyber security technology while known for providing a protective layer to our wealth generation IT infrastructure. The technology itself is a big wealth creator. This aspect of wealth creation and protection through cyber

# INDIA BEYOND 2020

## CHALLENGES & OPPORTUNITIES

### INDIA OPPORTUNITIES

security was well brought out both in quantitative and qualitative terms. In the Planning Commission document India has knowledge super power, strategy for transformation which is a report brought out by The National Task Force constituted by PM with Dr. Kalam as Co Chairman and with top scientific and educational administrators, industrialists like Shr. Narayamoorthy, educators like Prof. Balakrishnan of Indian Institute Of Science, Dr. Vidyasagar of TCS and myself DRDO as members. This report recognised the concept of Knowledge Society and recommended various aspect of knowledge creation and its protection while rolling out a grand framework for knowledge management that includes societal transformation, wealth generation and knowledge and resources protection as its three pillars.

In programme PURA which means Providing Urban Amenities in rural areas through what is called PEEKC is an acronym for Physical Electronic Economic and Knowledge Connectivities was brought out in the document by late Prof. Indresan (Former Director of IIT Madras). Such micro clusters based economic development in post Covid times with return of migrant labours is already being pursued by some states that includes Madhya Pradesh and Bihar. I hope Visionary initiatives of Dr. Kalam for an integrated approach to India's development through combining wealth creation and wealth protection would continue to be our mission in this hour of crisis.”