



Confederation of Indian Industry

HITACHI
Inspire the Next

Innovation Summit

(Jointly organised by Hitachi and Confederation of Indian Industry)

Innovation as a solution for rapid urbanization

(16-17 December 2013)

Executive Summary

Overview

The unplanned expansion of megacities and burgeoning urban population in India has given rise to new set of challenges which if left unattended could severely compromise the latent potentials of the country. There is urgent need for development of social infrastructure, particularly in the areas of energy, water, urban mass rapid transportation systems and logistics.



The aim of the **Innovation Summit**, organised jointly by Hitachi and Confederation of India Industry in New Delhi, was to explore the multiple dimensions of the social innovation proposition of Hitachi in the Indian context. Innovation Summit served as a platform for Business leaders, Industry experts, Government representatives, budding entrepreneurs, Academia and

Scientists to share their experiences, views and vision for using Innovation as a tool to craft economically viable solutions for tackling the challenges of rapid urbanisation.

It is projected that India's urban population will grow to 600 million in 2031 as against 285 million in 2001. Statistics reveal that as against a per capita investment of \$100 required to meet the challenges of infrastructure globally, India currently invests only \$17. Of the estimated 1 trillion dollars of investment that will be required in the coming few years for improving the urban infrastructure, a large part would have to come from sources beyond the government.

India needs an atmosphere that is conducive to massive private investments, both domestic and foreign, in the area of urban infrastructure development. Hitachi, through its new Social Innovation proposition, provides infrastructure solutions that combine products, services and sophisticated IT facilities focussing on sustainability objectives and



conservation of precious natural resources. Concurrently, India needs to innovate in all spheres of water, transport, energy and logistics for a futuristic and sustainable urban transformation.

- **Welcome Address**
Mr. Junzo Nakajima, Executive Vice President, Executive Officer and Chief Executive Officer for Asia Pacific, Hitachi, Ltd.
- **Address**
Mr. Chandrajit Banerjee, Director General, Confederation of India Industry (CII)
- **Keynote Address**
Mr. S. Gopalakrishnan (Kris), Co-Founder and Executive Vice-Chairman, Infosys & President of Confederation of Indian Industry (CII) for 2013-14
- **Inaugural Address**
Dr. Ashwani Kumar, Special Envoy of Prime Minister

The way forward

Intelligent Water Systems and Desalinization Technologies for assured water supply

Panelists:

- **Dr. Sanjay Bajpai**, Scientist, Department of Science and Technology
- **Mr. Mukund Vasudevan**, MD Pentair Water India
- **Mr. Toshiaki Higashihara**, Senior Vice President and Executive Officer, in charge of Medical Systems Business, President & CEO of Infrastructure Systems Group and Infrastructure Systems Company

Urbanisation has led to increased demand and deteriorating quality along with indiscriminate use of water. There is a need for concerted efforts with '*solution science*' to find research based technology solutions to address water challenges in India. Currently, country's total water availability area is only 2.4 % catering to 17% of the population. Research says that only 2% of available water is needed for domestic use, primarily drinking purposes. Water quality is an area of major concern. India needs to focus on conserving its fresh water resources. Critical challenges on water therefore pertain to both quantum deficit and quality deficit. Quantum deficit is due to significant loss of ground water, increase in area under irrigation, and increase in population. Quality deficit is mainly because of contamination.



The solution therefore is to switch to intelligent smart water management systems such as RO filters, Membrane Bio Reactor (MBR) Technology, rainwater harvesting and desalination technologies to tackle the water woes. Currently, 70% of the water consumed in households actually goes down the drains. It is therefore imperative that water recycling and reuse be promoted in India. The bouquet of solutions has to be hybrid and composite as there are variations in terms of geographical water availability, population density and purchasing capacity of people.

The requirements for 24x7 supply of clean water to households and industry therefore include renovating and expanding existing systems, replacing and laying new pipelines and also monitoring water usage through smart metres to control wastage.

Renewable Energy , Reliable Power and Smart Grid Solutions for India's Urban Transformation

Panelists:

- **Mr. Surinder Kumar Negi**, Managing Director GETCO
- **Mr. Harsh Sharma**, Senior Vice President IT and Network Management, BSES Yamuna Power Ltd.
- **Mr. Reji Kumar Pillai**, President, India Smart Grid Forum

Today India has the 4th largest power generation systems in the world with total installed capacities of 235000 MW. Over last few years, not only has the capacity doubled, but also the number of consumers has doubled. It is projected that by 2030, demand will go up to 900000 MW. To manage the ever growing gargantuan grid of this size, smart grid



management systems are required.

The primary challenge of meeting urban energy needs is that of ensuring a reliable power supply. 'Sector Specific Load Management' approach along with 'alternate source energy generation' and 'smart grids' are three innovative tools which have the potential to negotiate the energy challenges in India. The need for smart grid arises because of the inefficiencies

in the existing grids in India. In the last ten years, the numbers of grids have doubled. Additional challenges are about poor access, availability and quality of power on the grid. Out of 400 million, 79 million households are currently not connected to the grid which is almost 1/3 of India's population. The huge transmission and distribution losses continue to be a problem as 1/3rd of power being currently pumped into the network are lost during

transmission and distribution in wires. Some of this power is stolen but most of the loss is because of technical inefficiencies.

Smart grids offer improved visibility of power flows that enable a real time control of the power outflow by utilities, helping them to further reduce the losses. Ministry of Power has approved an India specific roadmap submitted by the India Smart Grid Forum. The Government has for the first time affirmed an India specific roadmap submitted to the Ministry of Power a year ago by India Smart Grid Forum has been approved by the

Government of India. Now for the first time, the government has affirmed in a policy document to provide lifeline supply of 8-12 hours of power per day to all households by 2017. The focus therefore is not just on electrification but lifeline supply. The target is to provide 24X7 quality power supply to all states across the country by 2027.

Keeping our cities moving: Driving Mass Rapid Transport Systems

Panelists:

- **Dr. Sudhir Krishna**, Secretary, Ministry of Urban development government of India
- **Mr. Rajeev Jyoti**, Chief Executive, Railway business Group, L&T India
- **Mr. Mangu Singh**, Managing Director DMRC
- **Mr. B I Singal**, Director General, Institute of Urban Transport India



The growing megacities in India have ushered in a new demand for mass rapid transit systems that have become the backbone of urban mobility globally. The MRTS supply trunk includes metro rails, mono rail systems, bus based systems and tertiary transport systems with para transit systems like personal vehicles, non-motor vehicles like bi cycles and good pedestrian walk ways alike.



Managerial and financial sustainability along with technological viability are the pillars for building mass rapid transport systems in a country like India. Transit systems are highly capital intensive and funding is a finite element. The infrastructure for a sustainable transit system today also converges with integrated transit and integrated townships which have high potential for rapid development through connectivity and place branding. The three major cost components in building mass rapid transit systems are energy, manpower and maintenance. These need to be controlled using innovative technology which includes usage of energy efficient systems to generate energy, controlling of manpower costs by switching over to international manpower and failure assessment to tackle inefficiencies.

Improved Logistics for Rapid Urbanization and Sustained Economic Growth

Panelists:

- **Mr. Amitabh Kant**, CEO, Delhi Mumbai Industrial corridor Development Corporation
- **Mr. Anil Arora**, Founder and CEO, M J Logistics
- **Mr. Phani Tamarapalli**, Director, Consulting Services, Hitachi Consulting

The key to driving India's growth at a rate of 9-10% per annum rests in its ability to bring about logistics revolution. At present average logistics cost in India is 13-14% of overall GDP compared to 9%, as experienced in western countries. The unorganized logistics sector in India today is estimated to be around 100 million USD. Almost 99% of this market



is controlled by independent truck drivers and contractors. Warehousing and related activities account for almost 20% of the logistics enterprise. National Highways constitute only 1.5% of total road network in country while 40% of cargo is moved through these roads. The major challenges for the Logistics sector include weak infrastructure facilities, delivery and in-transit delays, customs clearances and pricing mechanisms.

Therefore, a large scale planning and creation of new logistics city could enable India to manufacture and transport goods in a much faster manner, creating cost competencies to penetrate global markets. The government can play the catalyst by bringing in the best consultants, delisting projects, facilitating entry of the private sector, breaking the project into commercially doable units and enabling private sector to operate and bring in innovation in partnership with some of the best companies of Japan to drive India's growth through logistics.

The two big thinking projects today that underline the futuristic pathway include the dedicated freight corridor from Delhi to Mumbai and the dedicated freight corridor from Dankuni in Calcutta to Ludhiana. The Delhi Mumbai linkage will enable goods to reach the western coastal areas within 14 hours by the beginning of 2018, which today takes about 13-14 days by trucks or Lorries.

Additionally, accelerated IT investments, introducing new container rails, developing train infrastructure, 100% outsourcing and monitoring road cargo movements through advanced vehicle tracking systems such as RFID can help in mitigating the challenges such as port delays and customs clearances.

Innovation by Entrepreneurship as a solution to Rapid Urbanization.

Panelists:

- **Mr. Rentala Chandrashekhar**, Former Telecom Secretary and Incoming President of NASSCOM
- **Mr. Satyam Bheemarasetti**, CEO NeoSilica Energy Management
- **Mr. Samay Kohli**, Co-Founder & CEO, Grey Orange Robotics
- **Mr. Nitin Gupta**, CEO, Attero Recycling
- **Mr. Ramani Iyer**, Corporate Manager, Forbes Marshall

To address India's increasing needs for urbanization solutions, both individuals and companies need to encourage and engage with the spirit of entrepreneurship in India that has been witnessed in such significant terms over the past few years. With the availability



of venture capital, entrepreneurs, mentors and a growing eco-system it has become simpler to support and nurture start-ups. As India gears up for the challenge, it has been observed that major innovations on the way have been promoted by large enterprises. Also, the new generation of entrepreneurs with interests in the development of innovative products and solutions in water, power, transport and logistics have started to focus their attention towards India.

With technology itself undergoing evolution, India today is experiencing democratization of technology. Social media, cloud and state-of-art analytics today tend to smoothen the process of innovation. Drive for innovative ideas are being led by the bright and young talent. Students no longer think of merely graduating from top schools to land a job but possess a desire to explore newer frontiers and create new things. Working for profit and social benefit are no longer zero sum game. Budding entrepreneurs are combining their knowledge and skills to look for avenues for innovation. Understanding the pulse of this motivation is the essence of corporate leadership. Entrepreneurs need to appreciate the diversities that exist in India and enable a culture that allows everyone to flourish.



Hitachi in India - Building Sustainable Society Through Social Innovation

Hitachi announced its “India Business Strategy-2015” towards its goal of contributing to the Indian society through its Social Innovation Business. The company seeks to bolster business by increasing localization, strengthening partnership with Indian companies, connecting with Indian markets and diversifying business in Africa, Middle East etc. by employing India as a home base.

Hitachi, with excellence and innovation in several areas to its credit, has great technologies to offer in water recycling, water reuse, desalination plants, efficient logistics systems, mass rapid transport systems and efficient energy systems. Hitachi believes that the challenges of rapid urbanization can be met through Social Innovation. The key to success rests in customizing the innovation to local requirements. India offers tremendous opportunities that can be tapped by creating synergies between Hitachi’s high-end technology and Indian engineering manpower.

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The designations given in the document were at the time of the event. They may have changed.