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**SOCIAL INNOVATIONS
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Whitepaper

SOCIAL INNOVATIONS FOR FUTURE, SOLUTIONS FOR INDIA

EXECUTIVE SUMMARY

Overview

(21st, November, 2014)

The rapid pace of growth of Indian economy is leading to acute shortages of goods and services in relation to the population, especially in the urban context. Experts predict that this situation is not likely to change, in fact, it will only get worse. This has created a pressing need for development of ideas and socially innovative strategies to mitigate these issues before they assume dimensions that are irreversible.

To that affect the "Social Innovations for Future, Solutions for India" Forum was designed with the explicit aim to provide a platform to bring together luminaries and stakeholders from the relevant sectors. The attendees included policy makers, industry leaders, domain experts, senior representatives and thought leaders, who have a stake in ensuring that timely solutions are found to the current and perceived problems. The discussions revolved around creating solutions that can facilitate as smooth a transition as is possible for India to convert itself from a "developing" to a "developed" economy.

The session speakers formulated solutions based on their expertise, experiences, insights and research to arrive at relevant actionable solutions to solve seemingly intractable problems ailing the Urban Transport and Healthcare sectors. The high-profile conference speakers came from both India and Japan.

PANELISTS

- ▶ **Mr. Pramod Bhasin**
Chairman, The Skills Academy, Non-Executive Vice Chairman and former President and CEO of Genpact
- ▶ **Mr. Sunil Wadhvani**
Founding Donor, Wadhvani Initiative for Sustainable Healthcare
- ▶ **Mr. Niranjan Hiranandani**
Co-Founder at Hiranandani Developers Pvt. Ltd. and President at the Maharashtra Chambers of Housing Industry
- ▶ **Ms. Isher Judge Ahluwalia**
Indian economist, Chairperson, Board of Governors, Indian Council for Research on International Economic Relations

The session focused on challenges and opportunities around rapid pace of urbanization being witnessed in India; the demographic windfall of an extremely young population poised to enter the work force and the need to skill them with appropriate tools to be gainfully employed to become a long term asset for the employers.

There is an urgent need for out of the box ideas as well as using social innovation to devise solutions specifically for India. The industry and public sector in the last few years have stepped up their efforts to alleviate the emerging bottle necks vis a vis shortage of jobs. However, paradoxically there is a paucity of manpower to fill the requirements of Industry due to inadequate skills.

The solutions therefore lie in amalgamating the multiple examples of social innovation of individual companies that practically litter the business landscape and find ways to scale them in as short a time frame as possible. The solutions devised need to be socially relevant, economically viable and ecologically sound in order to ensure that the scalability does not lead to detrimental consequences with long term impacts. Critical factors necessary to foster the spirit of social innovation include identifying a clear role and responsibility for businesses, governments and private players.

The demands of a rapidly growing population in terms of jobs needed with 60% of the population under 35 years of age and an economy projected to grow in the upper single digits for the foreseeable future, presents ample opportunity to devise and implement solutions that are innovative and sustainable.

PANELISTS

- ▶ **Mr. Shankar Agarwal**
Secretary, Minister of Urban Development
- ▶ **Mr. O P Agarwal**
Director General, Institute of Urban Transportation
- ▶ **Mr. Abhaya Krishna Agarwal**
Partner- Infrastructure, Ernst and Young
- ▶ **Dr. Geetam Tiwari**
MoUD Chair and Professor for Transport Planning, Department of Civil Engineering,
Indian Institute of Technology, Delhi
- ▶ **Mr. Alistair Dormer**
Hitachi Rail Global CEO

If we consider the cities as the engines of economic growth, it is the transport systems that are the wheels of those engines. While the average size of the cities has grown 2 ½ times between 1989 and 2011, the population has, on an average increased 8 times¹ in the corresponding time period. New Delhi has doubled the vehicles on its streets in the last 10 years alone². To grapple with such rapid growth there is a pressing need to ensure that the planners arrive at the correct mix of public, freight, urban and inter-city transport that takes into account the current as well as the projected rate of population growth in the foreseeable future. A critical question that needs to be addressed is who and how to pay for this infrastructure roll out.

Possible solutions, it was felt needed to come from a judicious mix of carefully detailed planning and a well thought out strategy of execution after meticulously deciding the role of each player keeping in mind that transportation is not just infrastructure but also an instrument for social inclusion. Integration should not only be at operational level or informational level but also at the infrastructural level³. To gauge the scope of growth, even today the metro in Delhi caters to only about 2% of trips above 10kms⁴. To be effective there should be at least 200km of track per million urban population, as a mix of mass transit, mono rail and inter-city high speed rail

1 Mr. O P Agarwal, Director General, Institute of Urban Transportation.

2 Ibid.

3 Dr. Geetam Tiwari, MoUD Chair and Professor for Transport Planning, Department of Civil Engineering, Indian Institute of Technology, Delhi.

4 Ibid.

TRANSPORT: INTEGRATION OF URBAN TRANSPORT SYSTEMS

for an efficient and effective mix⁵. As India prepares to launch the ambitious 100 smart cities, they alone are projected to have a population of 200 million people⁶ and are expected to have a minimum requirement of 5000 km of track to begin⁷ to meet the transport needs of the upcoming projects alone.

The urban public transport mix needs to be a holistic solution which needs to solve the transport needs into the foreseeable future and needs to include feeder services, cycle tracks as well as sidewalks to cater to the short, medium as well as the long commutes⁸.

For such large projects to come to fruition, it is imperative that the planning and financing be meticulous. Needless to say the detailing needs to be so granular that it attempts to envisage all the possible contingencies that may arise, even with such detailed plans there maybe unforeseen circumstances that may necessitate re-negotiations. So the task of planning has to be both thorough as well as flexible and ideally the public sector should decide the contours as well as the vision and then let the private sector execute. It would be prudent when selling land or designating its use, some corpus be created or set aside as planned expenditure to invest specifically for urban connectivity⁹.

A framework is needed in place to bring urban innovation center stage. India is an example of how change throws up opportunities for the private sector. While in the past the private sector was taken for granted, the government seems to realize that its job is to ensure the services are available to everyone and the private sector is encouraged to bring in the efficiency and domain expertise which is desperately needed to reach size and scale in a cost effective manner¹⁰

5 Mr. Alistair Dormer, Hitachi Rail Global CEO.

6 Mr. Shankar Agarwal, Secretary, Minister of Urban Development.

7 Alistair Dormer, Hitachi Rail Global CEO.

8 Dr. Geetam Tiwari, MoUD Chair and Professor for Transport Planning, Department of Civil Engineering, Indian Institute of Technology, Delhi.

9 Mr. Abhaya Krishna Agarwal, Partner- Infrastructure, Ernst and Young.

10 Mr. Shankar Agarwal, Secretary, Minister of Urban Development.

PANELISTS

- ▶ **Mr. Manoj Sinha**
Minister of State, Ministry of Railways
- ▶ **Mr. Rajiv Datt**
Managing Director, Indian Railway Finance Corporation Ltd.
- ▶ **Mr. Rakesh Saxena**
CMD, Mumbai Rail Vikas Corporation
- ▶ **Mr. S B Nayar**
CMD, India Infrastructure Finance Company Ltd
- ▶ **Mr. Shin Oya**
Chief Representative, Japan Bank for International Co-operation
- ▶ **Mr. Alistair Dormer**
Hitachi Rail Global CEO

Mind boggling statistics with 64,460 kms of area coverage, a running track length of 87,040 kms (total trackage including yards, sidings etc. stood at 113,993 kms) with 7172 Railway stations¹¹, carrying more than 20 million people per day are both impressive and at the same time daunting in both the challenges and opportunities that they present for financing of the Indian Railways.

Needless to say, the associated cost to construct and run is also prohibitive. A blended PPP model is the most likely model for projects of this scale. There are strong suggestions for tweaking the model to ensure that profits aren't privatized or losses nationalized¹² and to get the model as close to what the world understands with most of the clearances and approvals granted before putting out the bids.

The Indian Railways is in need of urgent modernization and needs a complete re-haul, a condition compounded by neglecting to re-inject capital over years because of stagnant fares. A lot remains to be done, take an example while the freight traffic has increased over 10 times, there has only been network augmentation of approx 2 times¹³.

11 Indian Railways, "IR Year Book 2011 Tracks and Bridges."

12 Mr. S B Nayar, CMD, India Infrastructure Finance Company Ltd.

13 Mr. Manoj Sinha, Minister of State, Ministry of Railways.

TRANSPORT: FINANCING OF RAILWAY PROJECTS

The Govt. has already taken some bold steps (such as allowing 100% FDI) that has re-energized this sector and the outlook is bright and has also piqued the interest of a lot of private players from around the world.

South Asia's Infrastructure gap compared to East Asian economies stood at \$2.5 Trillion, with \$500 Billion needed only for transport (80% of which is needed by India alone)¹⁴. While there is no question that financing is desperately needed, the questions that remain are:

- 1) What is the model to be followed for financing?
- 2) How should the risk stratification take place?

Currently banks are the primary source of funding for all major projects in India but with the impending BASEL III framework implementation, banks will not be in a position to take the risk due to limited capital reserves and ratings. Most railway projects the world over in any case are long term concessions (40-50 years), as capital becomes scarce and costly, increasingly funding will have to come from creative and alternative financing schemes such as long term debt financing¹⁵.

Private players emphasized their commitment to taking risks, bringing best industry practices and their expertise to bear to meet the challenges set out before them, however, sought a definite and consistent government policy, which was both comprehensive as well as forward looking to help meet the challenges in the years ahead.^{16,17}

14 Mr. Rajiv Datt, Managing Director, Indian Railway Finance Corporation Ltd.

15 Mr. S B Nayar, CMD, India Infrastructure Finance Company Ltd.

16 Mr. Shin Oya, Chief Representative, Japan Bank for International Cooperation.

17 Mr. Alistair Dormer, Hitachi Rail Global CEO.

PANELISTS

- ▶ **Keynote Address – Dr. Nobuyuki Osakabe**
CTO, Healthcare Company, Hitachi, Ltd.
- ▶ **Keynote Address – Dr. Joerg Schackenberg**
Hitachi Medical Corporation 'Optical Topography Business'
- ▶ **Dr. Balram Bhargava**
Professor, Department of Cardiology Cardiothoracic Centre, AIIMS
- ▶ **Dr. AK Chaturvedi**
Director Radiologist, Rajiv Gandhi Cancer Institute and Research Centre
- ▶ **Dr. G.Venkatasubramanian**
Additional Professor of Psychiatry, Dept. of Psychiatry- National Institute of Mental Health and Neurosciences (NIMHANS)
- ▶ **Dr. Arabinda Kumar Rath** (joined as a moderator)
CMD, Hemalata Hospitals and Research Centre.

While we have come a long way in mankind's constant fight against nature and disease, there is still a lot left to be done before we can sit easy and rest on our laurels. There is a pressing need for social innovation in this critical space, where both the upper end and the lower end of the spectrum are seeing a dramatic churn. Unaffordable pricing at the upper end, paucity of services and access to the most basic health services at the lower end.¹⁸

Indians can bridge this divide quite easily as Innovation is inherent in the way that numerous issues have been solved in the recent past – "Jugaad Innovation" with a little hand holding by partners from the west teaching them discipline, adhering to timelines and reaching milestones. This culture can be institutionalized and will allow for exponential growth and help India achieve health outcomes parity with the most developed economies.¹⁹

Already some of the cutting edge techniques from the west are being utilized by specialists in India in Innovative ways, cutting time needed for treatment in certain cases and reducing costs dramatically in others.²⁰

As India grows more prosperous and joins the ranks of middle income economies of the world, it'll have to pivot from essential medical care to more specialized care as well as personalized medicine

¹⁸ Dr. Arabinda Kumar Rath, CMD, Hemalata Hospitals and Research Centre.

¹⁹ Dr. Balram Bhargava, Professor, Department of Cardiology Cardiothoracic Centre, AIIMS.

²⁰ Dr. AK Chaturvedi, Director Radiologist, Rajiv Gandhi Cancer Institute and Research Centre.

HEALTHCARE: INNOVISION

INNOVATIONS AND TECHNOLOGY TO DRIVE ACCESSIBILITY IN HEALTHCARE

(including high end non-invasive solutions) which is an area where currently there isn't much being done, but is the treatment of choice in all geographies where affordability isn't an issue.²¹ This trend holds true in both the fields of Physical Medicine as well as Mental Health.²²

Keeping the theme of the future in mind two cutting edge state of the art technologies that are just hitting the market with an astounding amount of potential are Proton Beam Therapy and Optical Topography, both of which are beacons of translational research having recently graduated from the bench to the bedside. They are showing a degree of magnitude and better outcome than comparable conventional technologies though the "prohibitive cost" still remains a sticky issue, which should resolve somewhat as economies of scale kick in with their ubiquitous adoption.^{23,24}

Case in point – with the Proton and Heavy Ion therapy²⁵ going on in Japan and the USA (MD Anderson Cancer Research Institute), a total of 5000 patients have benefited from this treatment which is less than 1% of the total patients undergoing Radio therapy.²⁶ The ease of isolation of targeted tumor ensuring no radiation effects the normal tissue, easier planning for different parts of the body, specific metering of dosage to be applied as well as shorter treatment times when compared to existing treatment modalities, set PBT in a league of its own.

With time the cost will come down and their cross usage will increase which combined with newer innovation / techniques (maybe from India) will lead to increased availability and affordability among the general patient population.²⁷

Optical Topography²⁸ gives an astounding insight into the workings of the human brain, specifically Neuro-psychiatry, Brain Mapping and is an emerging technology showing a lot of promise for application in the fields of Psychiatry, Neurosurgery and Rehabilitation.²⁹

Given these trends it seems fair to assume that going forward the fight against disease and nature for a longer healthier life span for all people is entering a newer more promising phase.

21 Dr. G.Venkatasubramanian, Additional Professor of Psychiatry, Dept. of Psychiatry- National Institute of Mental Health and Neurosciences (NIMHANS).

22 Ibid.

23 Dr. Nobuyuki Osakabe, CTO, Healthcare Company, Hitachi Ltd.

24 Dr. Joerg Schackenberg, Hitachi Medical Corporation "Optical Topography Business."

25 Levin et al., "Proton Beam Therapy."

26 Dr. G.Venkatasubramanian, Additional Professor of Psychiatry, Dept. of Psychiatry- National Institute of Mental Health and Neurosciences (NIMHANS).

27 Ibid.

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29 Dr. Joerg Schackenberg, Hitachi Medical Corporation "Optical Topography Business."

PANELISTS**▶ Keynote Address – Dr. Ako Ito**

Chief Surgeon, Hitachi General Hospital

▶ Keynote Address – Mr. Rajesh Srivastava

CMD, Rockland Group of Hospitals

▶ Mr. Lov Verma

Secretary, Ministry of Health and Family Welfare

▶ Dr. Pramod Kumar Julka

Dean and Professor, Department of Radiotherapy and Oncology, All India Institute of Medical Sciences

▶ Ms. Bharti Gupta Ramola

Executive Director/Markets Leader, Pricewaterhouse Coopers India

Breast cancer, the very word even today conjures up associations of lives abruptly cut short off, families destroyed and off unimaginable physical, mental, financial and medical hardships not just for the person suffering from the ailment but also for the whole family. The number of women thought to be suffering stands at a mind numbing figure of 165 million worldwide annually.³⁰

Challenges specifically for India in the coming years would be a reorientation of its disease profile from Communicable diseases to NCD's (Non-Communicable Diseases) which already make up 53% of all deaths due to illness. They include Cancer, Hypertension, Diabetes as well as Obstructive Respiratory Illnesses.³¹ There are 2.9 million patients living with Cancer and approx. 0.5 million deaths per year with another 11 lakh patients being diagnosed each year. The death rate is expected to go up to 0.7 million per year by the year 2015 according to ICMR Data.³² The main issue being that 2/3rd patients are diagnosed with stage 3 or 4 cancer which hardly leaves scope for anything other than palliation and increases the cost burden on all concerned with dismal outcomes.

Lifestyle is a possible cause of increased Breast Cancer rates. Being sedentary, eating junk food, marrying late and late / no breast feeding are all thought to contribute to increasing breast cancer rates.

Having quantified the issue, the primary goal for all concerned personnel should be to educate

³⁰ Dr. Ako Ito, Chief Surgeon, Hitachi General Hospital.

³¹ Mr. Lov Verma, Secretary, Ministry of Health and Family Welfare.

³² Ibid.

HEALTHCARE: EMBRACING LIFE

ONCOLOGY, BREAST CANCER AND IMAGING

patients to self-examine and to immediately see a specialist at the smallest hint of anything being amiss. Screening of the complete population, the size of India is an impossible task for even the best economies let alone a developing nation. Whilst both India and Japan are shy societies where there is a tendency amongst patients to neglect seeing a physician at the earliest, changes have been initiated in Japan to change this predicament³³. Early data suggests that detection rates have dramatically increased by approximately 50% after an Act of Parliament and with Insurance covering the cost of Cancer treatment.³⁴ In India these are stated goals that the health care authorities are striving to achieve.³⁵

Awareness campaigns and educating people about breast as well as other cancers will not do much to decrease the disease burden unless the hospital infrastructure as well as capacity is augmented to cater to the hopefully increasing number of enlightened patients coming to them in earlier stages of this ailment, allowing for far greater flexibility and optimistic outcomes.³⁶

The Govt. has an ambitious plan of setting up 70 new facilities dedicated to Cancer treatment all over the country with 20 state and 50 tertiary facilities.³⁷

Serious thought needs to be given to making cancer a compulsorily notifiable disease which would make sure that the numbers reported reflect the reality on the ground in a transparent manner.³⁸

33 Ms. Bharti Gupta Ramola, Executive Director/Markets Leader, Pricewaterhouse Coopers India.

34 Dr. Ako Ito, Chief Surgeon, Hitachi General Hospital.

35 Mr. Lov Verma, Secretary, Ministry of Health and Family Welfare.

36 Dr. Pramod Kumar Julka, Dean and Professor, Department of Radiotherapy and Oncology, All India Institute of Medical Sciences.

37 Mr. Lov Verma, Secretary, Ministry of Health and Family Welfare.

38 Dr. Pramod Kumar Julka, Dean and Professor, Department of Radiotherapy and Oncology, All India Institute of Medical Sciences.

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