SOCIAL INNOVATION IS A LEGACY FOR FUTURE GENERATIONS

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Whitepaper

EXECUTIVE SUMMARY



SOCIAL INNOVATIONS FOR FUTURE, SOLUTIONS FOR INDIA

OVERVIEW

MUMBAI, 16TH, FEBRUARY, 2015

The Indian Prime Minister, Narendra Modi, is a man on a mission to make India an attractive global investment destination. Tech-savvy Modi has emphasized that the transformation that India needs across infrastructure, urban transport, smart cities, water and healthcare, must be driven by innovative technology solutions. His government has been consistently assuring investors about creating an ease of doing business and predictability in policies.

It was in this context that Hitachi and NDTV hosted a one of its kind Social Innovation Forum in Delhi last November, to connect multiple stakeholders across urban transport and healthcare. The successful event was presided over by the Union Minister of Urban Development, Shri Venkaiah Naidu. The event deliberated on challenges and opportunities in removing urban transportation bottlenecks; financing of railways; and healthcare. Hitachi hosted its second event on Social innovations in Mumbai in February, focusing on infrastructure and information technology. The timing of the event couldn't have been better as the Prime Minister announced his intention of empowering states more than ever, ushering in 'cooperative federalism'. The states are directly involved in delivering public goods and services on several of the issues of most concern to voters - education, health, sanitation, water, business climate and employment opportunities.

The Hitachi event was inaugurated by none other than the Chief Minister of Maharashtra, Shri Devendra Fadnavis. The Chief Minister assured the audiences and august gathering that the Bharatiya Janata Party (BJP) led government in Maharashtra is in a bid to give much-needed boost to transform Mumbai Metropolitan Region (MMR) into a global, financial and commercial hub. The overall theme of the event was designed keeping the development, challenges and opportunities ahead of India. The sessions included - 'Smarter Cities, Smarter India'; 'Sustainable Water Supply Management'; 'Big Data & Cloud - The Way Forward' and 'The Future of Financial Inclusion'.

Some of the best and brightest luminaries along with important stakeholders from relevant sectors converged to debate, deliberate and discuss threadbare, the options available to the state and private players to ensure speedy solutions for seemingly entrenched problems. The high-profile event had speakers who primarily were from India and Japan came from disparate backgrounds - policy makers, industry leaders, domain experts, senior representatives as well as thought leaders, all of whom had a stake in ensuring that solutions to the problems were found in the fastest, most efficient, sustainable and most cost-effective form possible.

SMARTER CITIES, SMARTER INDIA





SESSION 1:

PANELISTS:

• MR. AMITABH KANT

Secretary, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Govt. of India (Via Live Satellite Link)

• MS. SHAINA NC

Spokesperson & Treasurer, Bharatiya Janata Party

- MR. VINAYAK CHATTERJEE Chairman, Feedback Infrastructure Pvt. Ltd.
- MR. BROTIN BANERJEE MD & CEO, Tata Housing

• MR. AKIHIKO TOBE

General Manager (Smart City), Social Innovation Business Project Division, Hitachi, Ltd.

This session put the spotlight on the need for ultrafast modernization of cities in India, keeping the future density of population in cities as a focal talking point. The panelists explained and quantified why the rate of rural to urban movement in cities was not sustainable in the medium to long-term. They said there is a pressing need for a drastic rethink on the way current cities were coping with this problem and how the newer ones need to be designed, balancing technology, governance and finances.¹

Every minute at least 30 Indians move from rural India to an urban Centre.² This rate is an insurmountable challenge for the states, given their limited resources. Fortunately, the recently announced smart cities project, with planned brownfield and greenfield projects, affords a glimmer of hope. The planners will deconstruct different aspects of the city and devise ways of creating higher efficiencies.³ The existing cities in the country are bursting at the seams due to the concurrent population explosion.⁴

In India, over the next 20 years, 350 million people are expected to move to cities and by 2050, this number would approximately touch 700 million.⁵ To put the problem in perspective, cities currently cover 3% of the world's landmass; contribute 80% to the world's GDP (Gross Domestic Product) and are responsible for almost 2/3rd greenhouse gases emission.⁶ Extrapolate that to 2050 and one can imagine the magnitude of the problem vis-a-vis climate change.

The biggest challenge for smart cities would be transportation, water, waste management and energy (both regular as well as alternative). For a smart city project to be successful, these are the stumbling blocks that need to be executed flawlessly.

- 4 Ibid.
- 5 Ibid.
- 6 Ibid.

¹ Mr. Amitabh Kant, Secretary, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Govt. of India.

² Ibid.

³ Ibid.

The blueprint of the upcoming cities would need to have these areas as the starting blocks of any meaningful development⁷ along with an integrated layer of IT overseeing, documenting, analyzing and tweaking every bit and byte of data emanating from these habitations to ensure maximum efficiency. It was felt that going forward it was imperative that all stakeholders be taken into confidence before formulating concrete plans as to the structure and nature of city development and creation.⁸

The residents of the city should be seen as critical stakeholders who should have a say in what shape, form as well as the nature these cities finally take. Also it is important to precisely quantify and define the 'smart' in the 'smart city' for future dwellers.⁹ The panelists were of the view that there might be smarter ways of going about developing brownfield projects which might not seem obvious at first glance, yet can help transform seemingly insurmountable challenges in an effective manner (Dharavi, slum cluster being a case in point).¹⁰

It was suggested that for every city to reach its optimum, the state requires 25 to 30 years of development, and it is almost impossible to predict the needs so far into the future. Hence, the 'smart' in the 'smart cities' also needs an attempt at predicting those needs. A little wriggle room would be needed for the habitants of those cities to be able to effect a change if and when required.¹¹

The panelists seemed to be of unanimous consent that these cities indeed seem to be the answer for India's housing woes. If done right, the smart city initiative holds the promise of mitigating this problem and create quality living for its citizens.



- 7 Ibid.
- 8 Ms. Shaina NC, Spokesperson and Treasurer, Bharatiya Janata Party.
- 9 Mr. Vinayak Chatterjee, Chairman, Feedback Infrastructure Pvt. Ltd.
- 10 Mr. Brotin Banerjee, MD and CEO, Tata Housing.
- 11 Mr. Akihiko Tobe, General Manager (Smart City), Social Innovation Business Project Division, Hitachi, Ltd.



SUSTAINABLE WATER SUPPLY MANAGEMENT





SESSION 2:

PANELISTS:

• MR. AMITABH KANT

Secretary, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Govt. of India (Via Live Satellite Link)

• MS. MALINI SHANKAR

Principal Secretary, Water Resources, Govt. of Maharashtra.

• DR. ISHER JUDGE AHLUWALIA

Chairperson, Board of Governors, Indian Council for Research on International Economic Relations.

• MR. RAHUL N AMIN

Chairman & MD, Jyoti Ltd.

• DR. ATSUSHI MASUKO

President, TSS Tokyo Water Co., Ltd.

• DR. HARUO TAKEDA

Corporate officer, Corporate Chief Scientist, Research and Development Group, Hitachi, Ltd.

With a relentlessly growing population, the paucity, availability, accessibility and quality of water has been a concern for governments and policy makers in India. Experts argue that the problem is not necessarily scarcity of water but mismanagement and a lack of policy initiatives and political will in addressing the issue. It is a fact that only 0.1 % water on this planet is potable and fit for human consumption, the rest is neither easily accessible nor it is in a state which is convenient to extract and use.¹² In India, while the supply is more or less constant, the demand is increasing at a rate which is unsustainable. By some estimates, 9 to 10% per annum (with approximately 82% used by agriculture alone), leading to a fast depleting water table as well as poisoning of the groundwater with pesticides.¹³

While India has 16% of the world's population, it only has about 4% of its water reserves. When India gained her independence in 1947, there was a 50% water surplus. By 2025, it is estimated that there will be a per capita shortfall of 50% of the water demanded.¹⁴ Though India has a growing population and increased demand for water (barring a few pockets), there is adequate water. The primary issue is its management. For conservation purposes, the panel suggested certain measures for water conservation and recycling - rainwater harvesting, double piping, reusable as well as recycled water and making every drop count. There is a pressing need to utilize technology for innovation in this area and to bring about a paradigm change in how individuals utilize water.¹⁵

There was consensus amongst the panelists that there was an immediate need to price this commodity appropriately. The fact that it was free to use was deemed to be the reason for its indiscriminate abuse.¹⁶

- 12 Dr. Atsushi Masuko, President, TSS Tokyo Water Co., Ltd.
- 13 Mr. Amitabh Kant, Secretary, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Govt. of India.
- 14 Ms. Malini Shankar, Principal Secretary, Water Resources, Govt. of Maharashtra.
- 15 Mr. Amitabh Kant, Secretary, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Govt. of India.
- 16 Dr. Isher Judge Ahluwalia, Chairperson, Board of Governors, Indian Council for Research on International Economic Relations (ICRIER).



Cases were cited of cities and towns where pricing was realigned and there was dramatic improvement in both the availability as well as its rational utilization.¹⁷ The panel felt that there is an urgent need for awareness on conservation and educating people regarding the water usage.¹⁸ Another important take from the session was - "To value water, price it right!" Panelists felt that there should be 'no free lunches' and there is a need to look into innovative pricing strategies.¹⁹ For example, a layered pricing strategy for the lower socio-economic strata, bulk water tariffs for bulk users such as industry, agriculture as well as high volume household consumption, volumetric or telescopic tariffs²⁰ to negate the effects of differential usage patterns. Deploy technology extensively to track the usage to the last drop.²¹

Contrary to popular belief, it was revealed that the poor often pay a disproportionately higher cost for this resource as opposed to the well-heeled, often, 8 to 10 times the prevailing market rate. If awareness is created about the need to pay a fair price, there might be an actual reduction in the amount that the general population pays for this resource.²² In effect, currently the poor are paying a heavy price as the politicians are not ready to charge for water.²³

As India has a very large coastal boundary, it was felt that for water deficit cities, saltwater desalination might be a solution for meeting the shortfall, especially with the great strides made in recent years in membrane technology which has brought the price points down dramatically. While the costs will obviously be higher as compared to regular municipal water, this could be an ideal solution for industries situated on the coastal belt²⁴ keeping their consumption off grid.

An interesting point brought to light often overlooked in India was the fact that if there was 24x7 availability of water in the pipes, the positive pressure would prevent biological and chemical contaminant seeping back into the mains, helping maintain the quality of water and consequently the health of the end-user, making it not just a fad but a health imperative.²⁵ While the popular perception might seem bleak about water, the panel seemed to suggest that the situation on the ground was not as bad as it seemed at first glance. Given proper planning, lucid thought to policy decisions and rational pricing, it should be possible to navigate this seemingly difficult terrain with apparent ease.

Finally, it was suggested that because of the fragmented nature of water administration in the country, the time may have arrived for a water regulator who would help coordinate amongst the various stakeholders -Centre, State, District and others.²⁶

- 17 Ms. Malini Shankar, Principal Secretary, Water Resources, Govt. of Maharashtra.
- 18 Rahul N Amin, Chairman and MD, Jyoti Ltd.
- 19 Mr. Amitabh Kant, Secretary, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Govt. of India.
- 20 Ms. Malini Shankar, Principal Secretary, Water Resources, Govt. of Maharashtra.
- 21 Dr. Isher Judge Ahluwalia, Chairperson, Board of Governors, Indian Council for Research on International Economic Relations (ICRIER).
- 22 Mr. Rahul N Amin, Chairman and MD, Jyoti Ltd.
- 23 Mr. Amitabh Kant, Secretary, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Govt. of India.
- 24 Ibid.
- 25 Dr. Atsushi Masuko, President, TSS Tokyo Water Co., Ltd.
- 26 Ms. Malini Shankar, Principal Secretary, Water Resources, Govt. of Maharashtra.





BIG DATA and CLOUD -THE WAY FORWARD



PANELISTS:

- MR. VISHNU BHAT Global Head, Cloud, Infrastructure and Mobility, Infosys
- MS. ALPNA J. DOSHI CIO, Reliance Group
- MR. AMIT SETHI CIO, Axis Bank
- MR. V.S. PARTHASARATHY CFO, Group CIO and Member of Group Executive Board, Mahindra and Mahindra
- MR. JAIDEEP MEHTA MD, IDC South Asia

• MR. SUNIL CHAVAN

Sr. Director, Solutions Sales, Asia Pacific, Hitachi Data Systems

Just a few years ago, there were academic conversations on the relevance of cloud as well as Big Data and their relevance to contemporary businesses. Today, no new business can even contemplate entering the market without a Big Data or a cloud strategy. This is the testament to the speed at which the market forces evolve in the fast paced world of information technology. There has been a fortuitous maturing of group of technologies at approximately the same time, causing disruptions to a lot of verticals along with changes in a lot of notions like privacy.²⁷ It's easy for the uninitiated to be overwhelmed by the sheer quantum of movement in this space.

During the session, it was suggested that the easiest way to get some clarity in this fast paced environment would be to focus on individual needs of enterprise and let the execution as well as the technology mix be decided by professionals in the field, both in the hardware and software realms.^{28 29}

With virtualization, SaaS (Software as a Service) and other such acronyms becoming increasingly pervasive, it has indeed become a full-time job to understand and ascertain what the optimum technology mix is for you as well as your business. The focus should be business outcomes rather than only technology mix.³⁰

- 27 Mr. Jaideep Mehta, MD, IDC South Asia.
- 28 Mr. Sunil Chavan, Sr. Director, Solutions Sales, Asia Pacific, Hitachi Data Systems.
- 29 Mr. Jaideep Mehta, MD, IDC South Asia.
- 30 Mr. Sunil Chavan, Sr. Director, Solutions Sales, Asia Pacific, Hitachi Data Systems.







Telecom, healthcare, public safety and smart communities are some of the leading specific verticals poised to take off in this space. Security and Data Analytics, being two very important layers on top of the verticals mentioned above, complete the product mix on offer by most high-end vendors in the market today. It was largely felt that the pipes had been laid and the time for higher end functionalities to kick in had arrived. Data analytics, enterprise solutions, banking and telecom network related products and the era of non-core distributed software requirements (such as emails contact lists as well as other non-essential items) being stored on the cloud was coming to an end, while higher end mission critical data was now shifting to the cloud. This trend is expected to grow in future. The era of pervasive computing had arrived on the back of cloud and data farms with additional on-tap available compute power providing unimaginable capabilities.³¹

From the banking perspective, it was repeatedly brought to the fore that the UID (Unique Identification Number) project has been a boon to the industry and has solved an intractable problem ailing the sector almost since its inception- namely KYC (know your customer) norms, that combined with big data, cloud as well as distributive computing have ushered in an era of rapid growth in the banking industry.³² With ever increasing computational abilities of everyday gadgets including automobiles, the panelists deliberated how to draw silos between industries and ascertain responsibilities as well as legal liabilities in case of a mishap.³³ A distinction was made between enterprise and everyday users in which it was demonstrated that enterprise users have a clear mandate to go ahead and exploit these technologies to the hilt without worrying too much about the security angle as they were better placed to deal with processes and ring fence the internal workings.³⁴ The end-user needn't feel too despondent as conversations are taking place on more reliable data security methods and techniques, with perimeter security being a thing of the past and the future belonging to bubble wrapped data packets.³⁵

The panel felt that going forward, our notions of privacy will need to evolve along with the ground reality in a market in which private data might become a freely traded commodity. But these are heady days for people wanting to start new businesses with little or no capital, as the infrastructure costs have come down drastically, thanks to the cloud infrastructure that they can opt for expanding their business needs on an "as and when needed basis". The next big thing taking root and poised for a dream run according to the panelists is the concept of the Internet of things.³⁶

- 31 Mr. Vishnu Bhat, Global Head, Cloud, Infrastructure and Mobility, Infosys.
- 32 Mr. Amit Sethi, CIO, Axis Bank.
- 33 Mr. V.S. Parthasarathy, CFO, Group CIO and Member of Group Executive Board, Mahindra and Mahindra.
- 34 Ms. Alpna J. Doshi, CIO, Reliance Group.
- 35 Mr. Vishnu Bhat, Global Head, Cloud, Infrastructure and Mobility, Infosys.
- 36 Ms. Alpna J. Doshi, CIO, Reliance Group.

FINANCIAL INCLUSION





SESSION 4:

PANELISTS:

- MR. N. JAMBUNATHAN Deputy MD and CIO, State Bank of India
- MR. RAJIV SABHARWAL ED, ICICI Bank
- MR. HARISH BIJOOR Brand Expert and CEO, Harish Bijoor Consults Inc.
- MR. VISHWAS PATEL CEO, CC AVENUES
- MR. LONEY ANTONY
 MD, Prizm Payment Services Pvt. Ltd.

• MR. SHUHEI AOKI

Advisor to President of Information and Telecommunication Systems Company, Hitachi, Ltd. and Former Director General, Payment and Settlement Systems, Bank of Japan.

In India, nationalised banking started primarily with the objective of financial Inclusion after the All India Credit Survey of 1955, which showed that credit was practically unavailable to the common man, especially in the districts. With State Bank of India coming into existence, by 1969 there were 8,261 bank branches across India which by end March 2008 increased to more than 65,000 branches. Despite these impressive figures, the financial inclusion did not take hold. On the final count, there are close to 1,20,000 branches spread across the length and breadth of India.³⁷

Last year, after taking office, the current dispensation in power in Delhi, took a decision to disseminate all subsidies through regular banking channels directly to end user accounts with the dual objectives of stopping leakages and enhancing financial inclusion. More accounts were opened in a few months than ever before, in fact creating a record of its sorts. This fact was attested by none other than the Guinness Book of World Records. Putting it in perspective, the Pradhan Mantri Jan-Dhan Yojna till January 2015 had opened around 12.6 Crore accounts, of which approx. 2.6 Crore were opened by State Bank of India on its own. Even accounting for some duplicate accounts, this is a feat unparalleled in the annals of banking anywhere in the world.³⁸ The discussion centered on whether it was sufficient opening up accounts or if there was a specific need to educate account holders about finance for true financial inclusion to take hold.

An attempt was made to define financial inclusion. It was suggested that as a minimum prerequisite, it should cover an insurance product, option of conducting transactions, the knowledge to be able to manage personal risks better, build assets, be in a position to consume savings and investment products as well as remittances and have a constancy of living standards.³⁹

³⁷ Mr. N. Jambunathan, Deputy MD and CIO, State Bank of India.

³⁸ Ibid.

³⁹ Ibid.

HANK E BANK COURS BOOR BOOR Lately, the direct benefit transfers for gas subsidies have started trickling into these accounts at the rate of approximately 40 lakh transactions a day pan India, with State Bank of India processing at least 12 lakh of those. The trickle-down economics from the Centre to the end-user has finally started and it remains to be seen how this novel experiment meets the milestones it has set out to achieve.

The sheer volume of transactions will be of a magnitude unseen by banking sector in India and will be an interesting challenge with all transfer schemes running parallel on all cylinders. The only possible solution for this problem lies in deploying cutting-edge technology to have a chance at solving this problem in a smart robust fashion. Banks in India realize the opportunity being presented to them with the launch of this scheme. They seem determined to not let this opportunity go waste and their endeavour is to include as many people as possible to India's financial lifeline by making them financially literate and ensure basic standard of living, all of which are important for the socio-economic security of the country.⁴⁰

The scale and speed of the roll-out has been possible only because of the Aadhar scheme which made the KYC (know your customer) possible in such a short time frame. The help given by corporate India can also not be undermined.⁴¹

The challenge though remains to convince people living in rural India to switch from conventional beliefs as well as parallel economy and to start depending on regular banking channels. New age e-commerce players, especially in the online payment segment, commented on the fact that there just might be a little excessive government intervention in the industry and maybe the industry could do a little better with a little less of it. They were of the opinion that excessive regulation is what is keeping market forces from being more aggressive. It was felt that this is one of the reasons why even till date there are less than 25,000 true e-commerce websites with a payment gateway attached to them⁴², which is abysmal compared to the world average. Having said that, it's the regulator and bankers' primary duty to ensure no gullible investor is taken for a ride.

Bankers with international exposure were of the view, for financial inclusion to truly take hold in India, both the banking and non-banking services layer was equally important.⁴³ If mandated to ensure services to the entire population, the banks themselves may become a limiting factor because of their limited bandwidth and size, and the attendant delays it would cause in rolling out said services to consumers.⁴⁴



- 40 Mr. Rajiv Sabharwal, ED, ICICI Bank.
- 41 Mr. Harish Bijoor, Brand Expert and CEO, Harish Bijoor Consults Inc.
- 42 Mr. Vishwas Patel, CEO, CC Avenues.
- 43 Mr. Shuhei Aoki, Advisor to President of Information and Telecommunication Systems Company, Hitachi, Ltd. and Former Director General, Payment and Settlement Systems, Bank of Japan.
- 44 Mr. Loney Antony, MD, Prizm Payment Services Pvt. Ltd.





For that to happen efficiently, all the stakeholders need to do their bit to make sure that all 120 Crore people get the services that they deserve. To facilitate that, collaboration is already an accepted norm in the industry with NBFCs (Non-banking Financial Company), payment companies and Tele-communication as well as profit-making entities with a rural reach (ITC Ltd./Hindustan Unilever Ltd.) already functioning as BCs (Business Correspondents). This augurs well to ensure that the services reach the destination they are targeted at.⁴⁵

The role of technology for delivery of services to such a wide spectrum of population cannot be understated, as the country has a predominantly young population which is technologically savvy, especially with mobile phones as well as applications. Hence, this may be the best way to deliver services to the broadest spectrum of people possible. In a few case studies, anecdotal evidence suggested that only about 15% bank customers are using the brick and mortar facilities and the rest are already comfortable with some form of mobilebanking ^{46 47} and even prefer the same. Some predict that in approximately 6 years, everything will collapse into the mobile phone and be called the M's suite namely the M-wallet, M-commerce and M-money.

There will undoubtedly be further innovation in this space, the definition of innovation being the reduction of costs especially the non-banking services layer.⁴⁸ Notwithstanding the recent success, the banking space is poised for a far greater role in the integration of every citizen into the economic lifeline of the country. Making each individual count in the economy as well as the country's development.

- 45 Mr. N. Jambunathan, Deputy MD and CIO, State Bank of India.
- 46 Mr. Harish Bijoor, Brand Expert and CEO, Harish Bijoor Consults Inc.
- 47 Mr. Rajiv Sabharwal, ED, ICICI Bank.
- 48 Mr. Shuhei Aoki, Advisor to President of Information and Telecommunication Systems Company, Hitachi, Ltd. and Former Director General, Payment and Settlement Systems, Bank of Japan.

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