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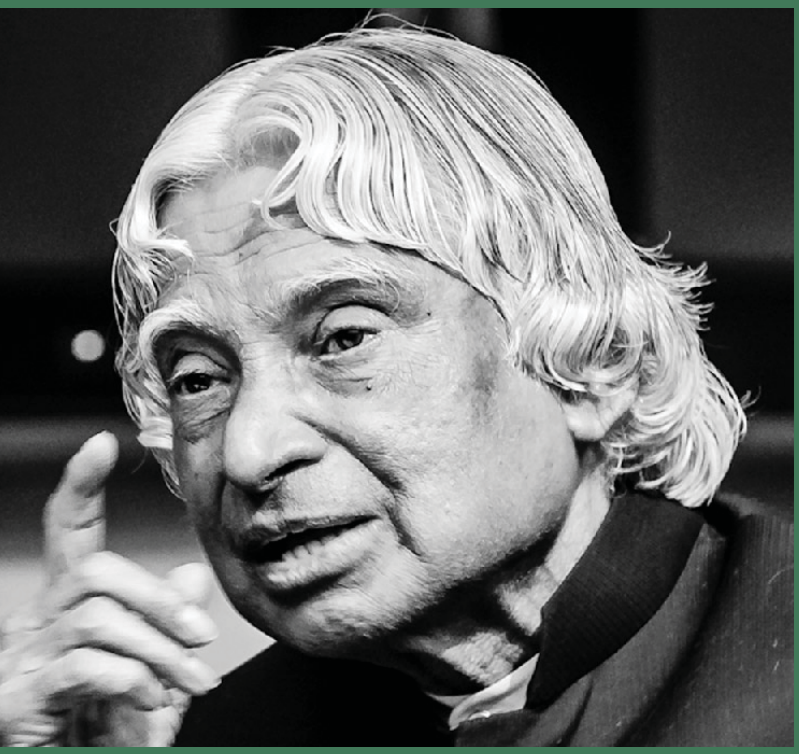
Kalam Was India's Sustainability Man



Late Dr. Abdul Kalam is popularly called India's 'missile man.' Looking at his extensive and expansive body of work, influence and impact, missile is just one aspect. Equally important, if not more, are his contribution to the vision and clear implementation strategy for a greener and sustainable India.

Clarity and simplicity in articulating complex ideas and strategies was Dr. Kalam's innate strength. Addressing IIT Bombay during TechFest 2015 in January, he said, close to 200 million Indian households can be used to unleash the potential of solar power. He said rooftops could meet both the household's needs and excess power can be connected to the grid. What India needs is "next generation entrepreneurship" to tap this opportunity.

"For millions of years, humanity has been taking more and more resources from the Nature. Time has come to take less and less from Nature to achieve sustainability."

Like late C K Prahalad, Dr. Kalam was certain that only entrepreneurs can solve most of India's problems. He often asked students to become job creators rather than go out and seek jobs.

With the prices of solar panels dropping significantly, and state electricity boards warming up to the idea of connecting excess power to the grid and some like Karnataka even pioneering it, this may become a reality in the near future. This could promote equitable distribution of energy and clean water which were Dr. Kalam's pet missions.

But unlike many sustainability experts who resent fast economic growth and instead suggest better

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Purpose: To excite Indian businesses, SMEs, executives and students about the immense business opportunity in not only adopting Sustainability as Strategy in their companies but also inspire them to the possibilities of a big market for innovative sustainability products and services.

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Information in this publication is drawn from a variety of sources, including published reports, interviews with practicing managers, academia and consultants. While doing so utmost importance is given to authenticity.

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redistribution, Dr. Kalam believed in India growing at 9 percent to solve most of its problems. His10-point agenda for India beyond 2020 was for bridging rural and urban divide, universal access to healthcare and value-based education. But he didn't mean growth was equivalent to more consumption. He said: "For millions of years, humanity has been taking more and more resources from Nature. Time has come to take less and less from Nature to achieve sustainability."

His inclusive growth model promoted 'integrated solutions'. He proposed a 'Societal Development Radar' to monitor and review sustainable growth. His user connectivity pyramid was built on "natural resources, info-communication, convergence of technology, societal business model, applications and at the bottom end, the users."

Dr. Kalam's books will act as an inspiration and guide for policy makers, NGOs and businesses. His legacy is clearly manifest in his books 'India 2020: A Vision for the New Millennium,' 'Ignited Minds' and 'Turning Points: A Journey Through Challenges.' May his soul rest in peace.

Environment Oath

1 I realize that every mature tree by photosynthesis absorbs 20 kgs of Carbon dioxide every year. By the same process each tree lets out about 14 Kg of Oxygen every year.

2 I will plant and nurture ten trees and will ensure that my family and neighbours also plant ten trees each. I will be an ambassador for the 'tree mission' in my locality.

3 I will keep my house and its surroundings clean and use biodegradable products where possible.

4 I will promote a culture of environment friendliness, through recycling and conservation of water and other recyclable materials both at home and at school.

5 When I start working, the decision I take as part of my organization will be such that protect the environment and preserves bio-diversity.

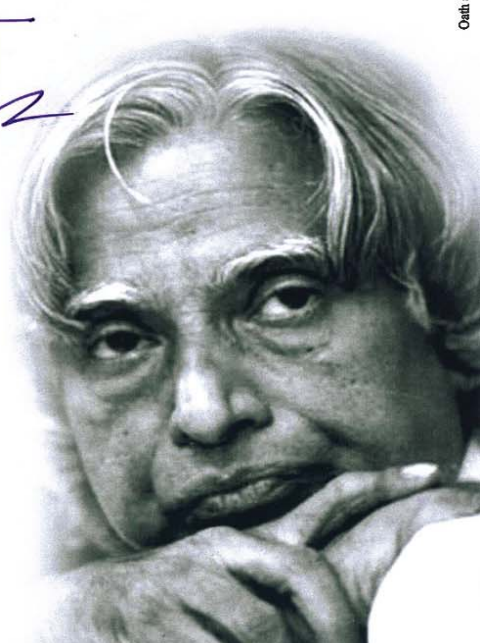
6 I will encourage the use of renewable energy as much as possible.

7 I will spread awareness about the need to preserve the environment in my home, in my locality and among my student friends.

8 I will encourage water conservation, especially by rain water harvesting and will spread the message among my family and friends.

Oath administered by Hon'ble Dr A P J Abdul Kalam at Centre for Environment Education (CEE), Ahmedabad on 24th July 2010.

Billion hours for billion people by 2016



CEE
Centre for Environment Education

Sustainable Smart Cities India

3 - 4 September 2015, Vivanta by Taj, Bengaluru, India

Conference Overview

India faces rapid urbanization and the urban population set to rise by more than 400 million people by 2050. It is also estimated that in the next 15 years, the urban population will contribute nearly 75% to the India's GDP. The government has identified the need for creating well planned cities that can match and foster this growth. In last 12 months, India has been extremely aggressive in executing its vision of setting up 100 Smart Cities and the cabinet on 29th April 2015 has approved the Centre spending of about INR 1 lakh crore (USD 15.6 Billion) on urban development under two new urban missions — Smart Cities Mission and the Atal Mission for Rejuvenation and Urban Transformation(AMRUT) of 500 cities. The vision is to preserve our traditional architecture, culture & ethnicity while we implement modern technology. These smart cities are currently attracting global investment, will create new job opportunities, improve communications and infrastructure, decrease pollution and ultimately improve the quality of living.

Some of the top challenges will include devising a fool-proof plan to develop smart cities, meaningful public-private partnership, increasing the renewable energy, water supply, effective waste management, traffic management, meeting power demand, urban mobility, ICT connectivity, e-governance, etc., while preparing for new threats that can emerge with implementation of these new technologies. "Sustainable Smart Cities India" will bring in national and international experts and stakeholders in this sector to discuss the opportunities and challenges in creating smart and responsible cities and citizens. Conference will help in creating a roadmap for converting the smart cities vision into a reality that is best suited for India.

Event Highlights

- 200+ Prequalified Delegates
- 20+ Interactive Sessions
- 5+ International Case Studies
- 20+ Solution Showcase
- 4+ Panel & Round Table Discussions
- 16+ Hours of Networking Opportunities

Invited Chief Guest

Shri. Vinay Kumar Sorake

Honorable Minister for Urban Development, Govt. of Karnataka

Advisory Panel & Keynote Speakers


Pratap Padode, Founder & Director, **Smart Cities Council India**


Gautham RK, Head – Operations, Sustainability Excellence, **Cushman & Wakefield (I) Pvt Ltd**


Karan Grover, Principal Architect **Karan Grover & Associates**


M Selvarasu, Director, **LEAD Consultancy & Engineering Services (India) Pvt Ltd**


Karuna Gopal, President, **Foundation for Futuristic Cities**


Shyam Khandekar, Founder, MLC

@Indiansmartcity

Benefits of Attending

- Participate in envisioning smart and responsible cities
- Understand the feasibility of building smart cities from existing unplanned cities
- Identify ways to retain tradition and culture while developing futuristic cities
- Learn from international case studies
- Gain knowledge on the available technologies
- Meet and network with the government authorities, corporate majors and market experts
- Take away sensible, tangible and actionable conclusions

Who Should Attend:

Government Bodies, Regulatory Bodies, Local Authorities & Policy Makers (Ministers, Mayors, Commissioners, Administrators, Municipalities, City Planners), Stakeholders of National Missions: Smart Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Digital India, Make In India and Swachh Bharat Abhiyan, Infrastructure development firms, Urban Planners, Architects, Designers, Real Estate Developers, Project Management Consultants, Conglomerates, Senior Stakeholders of Industrial Corridors, Public and Private Companies involved in Smart Cities Public and Private Transport Operators, Metro Rail, Traffic Management, Gated Communities, Business Parks, Tech Parks, Organisations with large office spaces Research & Development Centre, Tourism, Hospitality, Entertainment, Citizen Communities (NGOs)

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Has Business Reached an Inflection Point on Climate Change?

The vibe and tenor of the language at the Business & Climate Summit, held in Paris mid May 2015, as a prelude to the mega Climate Change Summit in December, this year, gave the world a glimpse of more than 2,000 business leaders shedding their cloak of caution, inhibition and cynicism towards climate change. But they did insist that only clarity and continuity of governmental policies could help them sustain their guarded exuberance.

An unprecedented mobilization of 25 worldwide business networks representing over 6.5 million companies from more than 130 countries pledged to lead the global transition to a low-carbon, climate resilient economy.

This is a strong message by businesses to government leaders who will determine the fate of the planet when they meet in December. Now, with both business and religious leaders led by Pope Francis exerting strong pressure on political leaders, they will be pushed to take strong decisions followed by determined actions.

Highlights of The Summit

- Business calls on policymakers to leverage public funds and private sector finance towards low carbon assets
- Introduce carefully designed, robust and predictable carbon pricing; and to eliminate fossil fuel subsidies
- That businesses are ready to innovate and are preparing to accelerate the scale and pace of deployment towards low-carbon future

- Business believes the UN's objectives are achievable and compatible with continued economic growth and human development if all actors work together
- The establishment of an alliance between business and governments leading to the integration of climate policies into the mainstream economy. This should **include enhanced public-private dialogues** at global and national level, backed by a commitment to raise ambition in line with developments in climate science.
- A call for policy makers to **de-risk investment towards low-carbon assets, especially in developing countries**
- Particular focus needs to be given to the **developing world where funding mechanisms should be set up to fight poverty whilst leapfrogging towards a low-carbon development path.**

Paul Polman, CEO of Unilever, said: "When faced with the challenges of climate change, **businesses should be part of the solution**. Companies that have seized low-carbon opportunities are increasingly seeing rewards. To go further, we need a strong international climate agreement that **sends a clear and credible signal to businesses that low-carbon policies will endure.**"

Jean-Pascal Tricoire, CEO and Chairman of Schneider Electric and Chairman of Global Compact France, said: "The difference between now and three years ago is that **nobody in business really dares to say climate change is not happening.** Companies have actually taken commitments on emissions reductions. With bold, clear and long-term climate policies to keep within the +2°C threshold, business will create growth, jobs and continuous innovation on the way to a prosperous low-carbon economy."

Secretary General of the United Nations, Ban Ki Moon, said "Business leaders are now in the vanguard of the movement to take climate action."

Peter Bakker, President of the World Business Council for Sustainable Development, said: "Over 80 companies are now part of the Low Carbon Technology Partnerships initiative and more business leaders and investors are signing up every day to campaigns such as those led by **We Mean Business** to demonstrate their action on climate. **The business world is scaling up action, fast.**"

Mats Anderson, CEO of Swedish National Government Pension Fund, AP4, said: **Putting a price on carbon is absolutely key:** it will send the right signal to the market, the investors and the polluting companies. And at the same time it will reward the leaders who take climate change seriously. Last but not least, it will push more money into investments in renewables and green infrastructure.

It's clear that companies want to work with governments to build a clean, predictable and transformative path toward a safe and profitable future. There's big money to be made while doing so because trillions of dollars are needed to build the low-carbon, climate-resilient economies across the world.

Climate Criminal Is India's Darling

Demand for coal is declining everywhere including the United States and China but India will need coal for a long long time. Here's a look at how the 'dirty' mineral is playing out and what India can do to reduce its dependence

A July 2015 analysis of Bloomberg Intelligence stated: "U.S. power plants are switching to natural gas, environmental restrictions are kicking in, and the coal industry is being derided as the world's No. 1 climate criminal. Prices have crashed.

Globally, the pollution is too thick and the alternatives too cheap for coal to flourish. Wind and solar power costs are crashing, particularly in China, the largest coal user."

Forecast of proportion of Electricity from Renewables by 2040

Country	All renewables	Country	Solar PV and wind
Brazil	92%	Germany	77%
Germany	90%	UK	63%
UK	77%	Australia	52%
Australia	59%	China	37%
China	53%	France	30%
India	42%	Brazil	34%
France	42%	India	33%
Japan	34%	US	24%
US	32%	Japan	20%

Source: Bloomberg New Energy Finance. Note: Asia Pacific, Americas, and Europe, Middle East & Africa

In contrast India is starved of coal. Drop in international prices is helping. India now is the third largest importer of coal to feed its power and steel plants. Its domestic coal production is in a limbo due to trade union threats against privatization of coal mines.

It's a long way before India's dependence on coal comes down significantly. TERI statistics noted:

- Around 69% of India's power generation is coal based
- Even under a least coal usage scenario, coal will supply more than 40% of the primary commercial energy in 2031-32
- It is the most abundantly domestically available fossil fuel, while about 80% of oil has to be imported
- A total of 293.50 billion tons of geological resources of coal has been estimated in the country (8% of the global coal reserve)

Way Forward for India

- Create, establish and involve business houses in protecting, increasing forest wealth / cover
- Win partnership with communities
- Adopt large-scale decentralized renewable power for rural and urban clusters and use smart pricing
- Enforce very high efficiency and prevent air pollution in mining and transport of coal
- Pricing incentive for use of non-fossil fuel based energy
- Adopt large-scale afforestation of dry land to offset coal's damage to the forest cover

India has started doing all the above but it needs to be done on a mission mode.

http://www.teriuniversity.ac.in/mct/pdf/new/environment/IGNFA.pdf

Indian Navy Takes Tips from US Navy

The Indian Navy announced a slew of green initiatives in recent months under the guidance of Admiral R.K. Dhowan, Chief of the Naval Staff. It appears to be on course to put itself on a mission mode for environmental sustainability.

The Indian Navy is in the process of synergizing its 'blue water capability with a green footprint'. These have primarily been achieved by the adoption of a comprehensive 'Indian Navy Environment Conservation Roadmap' which is being implemented in all its facilities.

The Indian Navy is in the process of synergizing its 'blue water capability with a green footprint'

The key initiatives can be divided into two broad areas:

A 3-5 percent reduction in power consumption is being targeted annually. Promulgation of guidelines for use of energy efficient machinery onboard sea-going platforms and undertaking energy efficient operations for ships have been framed.

Steps have been taken to ensure compliance of marine pollution (MARPOL – International Convention for the Prevention of Pollution from Ships) guidelines for waste disposal and discharge of effluents onboard ships. Use of environment friendly Sewage Treatment Plants (STP), commissioning of Effluent Treatment Plants, increasing the use of renewable energy in establishments and setting up of biogas plants in shore establishments have been initiated. **The 4Rs (Reduce, Replace, Reuse and Recycle) have also been aggressively pursued to minimize the environmental impact of naval activities both at sea and ashore.**

Learning from the US Navy

The US Navy is considered a leader in this area. The US Department of Navy (DoN) adopted five well-defined energy goals in 2009 to increase war fighting capability, both strategically and tactically. **From a strategic perspective, the objective was to reduce reliance on fossil fuels, while from the tactical perspective the objective was to use available energy sources (at site) by increasing energy efficiency.** This would reduce the vulnerability associated with long fuel supply transport lines and would lead to an increase in the operational capability. The five energy goals were, energy efficient acquisition, sailing the "Great Green Fleet", reducing non-tactical petroleum use, increasing alternative energy ashore, and increasing alternative energy use.

Spurred by the successes achieved by the DoN, the US army's Office of the Assistant Secretary of the Army for Installations, Energy and Environment, released 'Strategy 2025' (at the end of 2014), setting forth the army's vision for Installations, Energy and Environment. This was followed by the recently-released 'Energy Security and Sustainability Strategy', by the US army.

A strong reporting mechanism is also in place and the 'Strategic Sustainability Performance Report', which is updated annually, ensures regular and comprehensive monitoring. **The Indian Navy feels the US model is a good example of how the concept of sustainability is being integrated into operational readiness.**

http://southasiamonitor.org/detail.php?type=sl&nid=12384

Goonj's Anshu Gupta Bags Magsaysay

Goonj founder Anshu Gupta was awarded the 2015 Ramon Magsaysay prize "his creative vision in transforming the culture of giving in India, his enterprising leadership in treating cloth as a sustainable development resource for the poor, and in reminding the world that true giving always respects and preserves human dignity."

The idea of 'Work for Cloth' came from a visit to Khooni Darwaza in Delhi once with a so-called 'body collector', a person who collects dead bodies of homeless or unidentified persons.

"One December night, I accompanied him to collect an unidentified body at Khooni Darwaza. Wearing nothing but a thin cotton shirt, the man had clearly died of cold..." Gupta told Business Standard in an interview.

That was when Gupta realized that clothing as a basic human right was often overlooked. In 1999, he quit his corporate job to start Goonj, with only 67 pieces of clothing that his wife and he had collected.

"I didn't want to give these clothes as an act of charity. Charity strips people of self-respect" he said.

Observing the lack of suitable resources at the time of natural disasters despite the abundant supplies from well-meaning donors Gupta's Goonj works in 21 states across India in disaster relief, humanitarian aid and community development.

Since the traditional exchange of charity denied dignity to those receiving it, in response, Goonj developed a working system, the Cloth for Work program, which initiates village-level development activities and rewards communities for their labor, allowing them to preserve their dignity. Goonj ships over 70,000 kgs of material a month and has also converted 1,000 tonnes of used clothes, household goods and other urban discards into usable resources for the poor.

In 2012, Goonj was chosen by NASA and the US state department as a **"Game Changing Innovation"** and in the same year, Forbes magazine listed Gupta as one of India's most powerful rural entrepreneurs. Goonj was also awarded the Japanese Award for Most Innovative Development Project by the Global Development Fund.

Gupta's pet project is 'Not Just a Piece of Cloth'. "In villages and slums, where women and girls don't have enough to clothe themselves, menstrual hygiene is really poor. Goonj repurposes old cotton into hygienic pads and uses them to generate awareness about hygiene and the myths associated with menstruation.

Indian & US Students to Study Space Travel & Impact on Environment

Sixteen students from India and the US will brainstorm to come up with innovations on tapping space technology for environmental sustainability.

Termed "Hacking Space: A Student Partnership To Sustain Life on Earth", the project is a collaborative effort between Science City, Kolkata (a unit of National Council of Science Museums) and Chabot Space and Science Centre, US.

Beginning in September this year it will go on till August 2016, said National Council of Science Museums director general G.S. Rautela.

"Eight students between 15 to 18 years of age from each country will be selected to **co-develop potential strategies for environmental sustainability on earth focusing on the lessons learnt from space travel.** The participants will examine what elements are necessary for ecologically sustainable life in their local communities and will educate their counterparts regarding their unique obstacles," said Rautela.

Eight adult advisors will guide the students who will share insights and experiences from two different cultures to provide diverse perspectives.

A series of demonstrations and activities, exploring the solutions that space travel innovations offer for the environmental and sustainability challenges people face in Kolkata and California, will be developed by the young participants, said Rautela. Guest lectures and Skype sessions will assist the students.

The conclusion of the project will be a travel exchange in the spring and summer of 2016, sharing the work with the community in Kolkata and Oakland, in California.

The works will be presented at least once in each country to museum visitors during the funding period to educate the community on sustainability.

MEC Students Spread Awareness About Plastic Use During Godavari Pushkaralu

"Godavari Pushkaralu", the 11 day festival that began on 14th of July 2015 witnessed a green drive by the students of the Environment Club of Mahindra Ecole Centrale.

Mahindra Ecole Centrale, an Indo-French engineering college, is the maiden education venture of the Mahindra Group. The college focuses on creating the 'New Engineer' who is highly attuned to her environment. As part of this, MEC students ran a campaign to educate vendors near the Basara temple about eco-plastic or minimizing plastic pollution during Godavari Pushkaralu.

A large amount of plastic waste gets generated at Basara during Godavari Pushkaralu as nearly half a million devotees pay visit the temple each day.

MEC students' "go green" campaign involved banner displays, personal interaction with shopkeepers to sensitize them about the issues and request them against using plastics during the festival. They also contributed to the campaign by funding non-plastic bags.

Based in Bahadurpally, Hyderabad, MEC is situated in a sprawling green campus of 130 acres. 240 students take the 4-year B.Tech Program.

1% of Project Cost for Planting Trees Along National Highways

The National Highways will soon have enough budget to line the roads with trees. This 'green highways policy' approved by the government sets aside one per cent of the civil cost of national highway development projects for the planting of trees in a planned manner, covering both existing NH sections and new routes that would be added to the network.

The road ministry has finalized a "green highways" policy to "tree-line" 140,000 kilometers of national highways. The Ministry of Road Transport & Highways (MoRTH) has formulated the new Green Highways (Plantation and Maintenance) Policy, 2015 after a series of reviews, which raised concerns about the poor quality and lack of maintenance of green cover along most national highways.

The vision, the policy says, is to develop eco friendly

National Highways with participation of the community, farmers, NGOs, private sector, institutions, government agencies and the Forest Department. The guidelines also include the type of trees to be planted depending on the nature of soil, a monitoring agency, open tender schemes among other details.

This is a very positive move with multiple benefits apart from the environment. It improves driving pleasure by cutting down heat on roads; could prevent melting of tar due to extreme heat; offers employment to local population; offset carbon footprint in some way.

Socio Economic Census

Numbers Don't Lie

The paperless Socio Economic Census 2011, released in July 2015 by the Government of India, puts to rest several guesstimates about the extent of deprivation and inequality in India. The disturbing data is a reminder that very serious efforts are needed by all stakeholders to minimize deprivation. It also shows that India's achievements on the socio-economic front are abysmal and thousands of crores spent have had marginal impact.

The report, as the government has said, will help targeting of policies and schemes better. The Aadhaar card, bank account for all have the potential to cut leakage of funds. Despite this, it all boils down to enhancing governance standards across the country especially by the states and local bodies. Bad governance hurts the poor the most.

Census highlights

Rural poverty level	-	25.7%
Deprived Households	-	10.69 crore out of 24.39 total households
Deprived of at least one socio-economic parameter	-	18.7%
Landless households	-	56%
Illiterate (rural)	-	36%,
Education (rural)	-	5.4% high school, 3.4% graduate

What's the way out?

- Increase allocation to education and healthcare as a percentage of GDP
- Government should move out of higher education and use the funds for upgrading primary education
- Use video technology for teaching. Speed up digital India plan
- Improve mid-day meals schemes
- Promote adult literacy with innovative schemes
- Cover everyone with health insurance
- Empower gram panchayats with real power with inclusive representation
- Reform syllabus with focus on vocational training, spur creativity and discourage rote learning

The list can run long, but these should help in giving the momentum.

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How IoT Can Revolutionize Energy Efficiency in India

Prabhu Ramachandran, director at WebNMS, a division of the ZOHO Corporation, India's leading private product company, chats with SustainabilityNext about challenges and opportunities in adopting Internet of Things (IoT) in India. He believes IoT can help India achieve significant efficiencies in remote consumption of energy, especially solar, wind and telecom

What are the roadblocks to adoption of IoT in India?

As there is no market leader yet we have about 50 different vendors making a lot of noise with not much clarity. That is a problem. It will take another two years to get a clear understanding of IoT in India.

Unfortunately, small businesses are not very comfortable with IoT yet because of the hype around it as the next $100 billion market and the ambiguity regarding the technology involved. Hence, application of IoT at smallest levels, such as monitoring diesel generators or monitoring water pumps, is difficult.

This is the change that we are bringing in. We work through partners. We ask them to talk to a prospect and understand how we can address their problems especially in energy, water and security areas. Thereafter, present them with a solution we can implement rather than simply talk about IoT or platforms.

What is the percentage of cost of using IoT to the set-up cost?

For example, setting up cell towers costs a lot but the remote monitoring system cost is only Rs. 50,000. But the value in terms of reduction in energy bills is a very significant 30%.

Who are your competitors in platform?

More than the competitors, frankly, we are concerned about the hurdles. Today, there are about 20 platform vendors and 50 different start-ups working on it but that will pan out because without a product you can't survive for long.

We are prepared for the long run. The major hurdle is reaching the customers - how to take this idea to customers. We need to excite the interest of the end users. Also, we need to attract more partners.

How can IoT be used in harnessing solar-wind energy efficiently?

In the first couple of years after installation there would be no problem. For example, inverter could fail and it goes unnoticed. The power gets generated but it is not fed to the system. This is where we come in. We hook up with those inverters to monitor how much power is generated and report errors in real-time. Also, based on weather conditions we calculate if the power generation is equivalent to weather condition.

How will IoT influence the cost of sensors?

Due to IoT opening up the market, there are a lot more sensor companies coming out with innovative options and then there is economy of scale. Once the adoption goes up there is always economy of scale and smaller players will emerge.

The ZOHO Mantra for Product Companies

How is Zoho doing?

We are doing good. We are a private company. We haven't taken any external capital in our last 18 years of our history. We invest on long-term markets. For example, we were early entrants in the cloud space. Today, the cloud offering of Zoho is a combination of Office Suite, Gmail, WebX, Dropbox and Evernote. As we have this breadth, we are able to do well even when the market is down.

Similarly, in IoT, we have adopted a platform model and want to stay as a product company. We started IoT in 2009 and we knew that, for at least five years, there would not be much revenue. **Our strategy is to build the product first and then go to market it.**

What is the size of your company?

Zoho has 3,000 people. The WebNMS division has about 150 employees. But our delivery model is always through partners. We are scaling on partner base because once we sell the software to the customer we ensure that it is working and then do a managed service on top of it.

What is Zoho's USP?

We are clear on B2B and we have a very clear focus on three areas – energy, security and asset tracking. We feel that a combination of these three is a clear winner.

What can new product companies learn from Zoho?

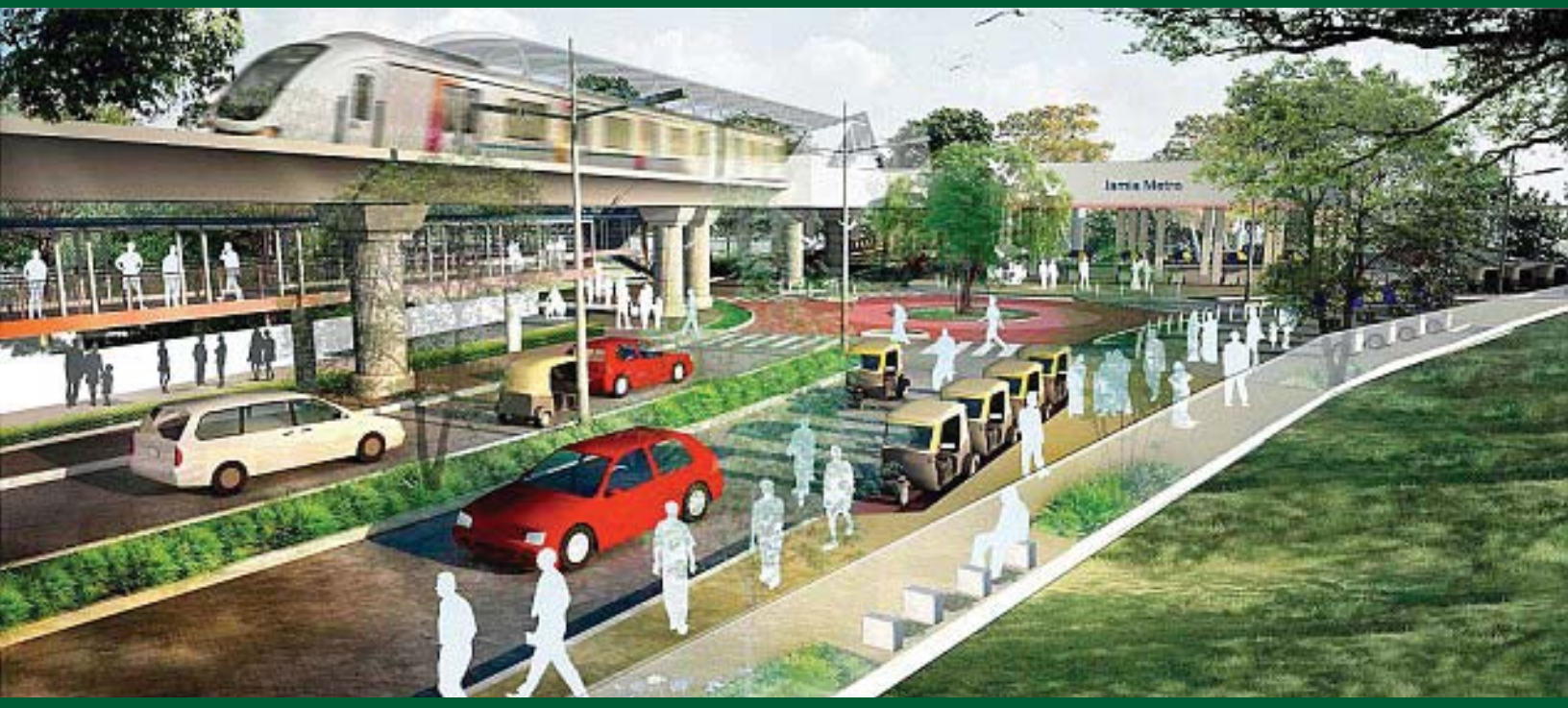
The model we follow is to pick up the right areas and start small experiments. **We try and focus on the product first and then talk about marketing.** When we start something new, we don't do it big; the product manager is the only guy working initially and when we see traction we gradually expand it. Thereafter, as traction increases we productize it by putting marketing money into it. It's very organic.

Also, **pricing wisely is important. We try to be as transparent as possible and keep it affordable.**

Intelligent Systems for Smart and Sustainable Transport

The recently launched Smart City Mission, with a total financial grant of INR 48,000 crore for the period 2015-20, intends to cover 100 cities. Select Indian cities will have to prepare a Smart City Plan (SCP), which mandates the inclusion of area-based development plans (including redevelopment, retrofitting and Greenfield development) and pan-city initiatives. The pan-city interventions will focus on offering city-wide and inclusive solutions to urbanisation challenges by making use of smart solutions for better use of city infrastructure and services in transport, water, energy, safety, environment and health.

As a prelude to the smart solutions, the implementation of Intelligent Transport Systems (ITS) for traffic management, smart parking and integrated multi-modal transport have been listed as some of the initiatives.



ITS is the application of advanced technologies (information and communication technologies) which aid in alleviating traffic congestion, assist inefficient mobility (passenger and goods) and enable efficient use of urban transport infrastructure. The use of ITS applications may vary for various stakeholders. Some examples of situations where ITS has played a key role in aiding decisions are:

- Commuters –Making travel-related decisions (if, when, and how), choosing transportation options, accessing public transport timings, viewing ride-sharing options, etc.
- Traffic Police –Tracking traffic rule violations, communicating incident information, clearing traffic congestion, etc.

- Other government stakeholders-Implementing demand management measures, identifying major (air) polluted zones due to traffic, ensuring the citizens' safety etc.
- Public transport organisations – Using smart cards, developing a passenger information system, tracking public transport vehicle, financial planning, etc.
- ITS Vendors –Identifying hardware and software requirements for compatibility and scalability.

The National Urban Transport Policy emphasises the importance of ITS for urban traffic management and monitoring. ITS applications have also been promoted extensively through JNNURM funding, wherein public transport systems are equipped with ITS technologies such as Global Positioning Systems (GPS) and Passenger Information Systems.

Using ITS data in planning and decision making

Pan-city focus is key to unleashing the true potential of ITS interventions in India. The focus of ITS should be on providing city-wide solutions to make effective use of existing infrastructure and promote smart urban mobility. ITS applications (for various purposes) should act as a network for the collection of real-time data which is a key component of any planning process. The collection of various types of data such as parking related, real-time traffic, public transport operations, etc. must be reliable and accurate so as to understand current mobility trends.

Therefore, standards are to be developed that enable interoperability and integration, create well designed information models for data sharing while ensuring privacy and consistency in the data collected by multiple stakeholders. An effective way of ensuring this would be to create a common platform where the data from all sources can be collected and analysed for better planning and decision making.

ITS can play an enabling role in the implementation of sustainable mobility interventions such as travel demand management, improved accessibility to public transit and safety assurance. In cities like London and Singapore, ITS has been considered as a traffic management and road charging measure to mitigate congestion. ITS initiatives implemented in cities such as Ahmedabad, Bangalore, Indore, Mysore, etc. primarily include traffic management and public transport operations (passenger information system, fare collection, traffic control centre, vehicle tracking). However, the role of ITS for urban transport should not be limited to stand-alone applications. An integration of the various applications to create a holistic approach for the utilisation of ITS applications is still missing in Indian cities.

The primary challenge with ITS is to make efficient use of technology to coordinate with commuters, public transport operators, private vehicle users, transport infrastructure (network, signals),etc. with reliable, consistent and updated information to aid in informed decisions.

For example, it can be used for the integration of information from various modes of transport for seamless mobility to aid traffic management with efficient use of technology. The traffic data and transport networks data can help efficient trip planning serving the needs of various stakeholders.

Thus, a city level ITS information system is deemed critical for the collation of information on an ITS inventory in terms of use, type, functionality, compatibility, data use, etc. This database can be beneficial for the selection of new technologies, planning and coordination between various stakeholders. To baseline the past performance and plan for future operations, ITS data has the potential to play a significant role. The platform should ideally be the hosted by the municipality.

Challenges

The primary challenge with ITS is to make efficient use of technology to coordinate with commuters, public transport operators, private vehicle users, transport infrastructure (network, signals),etc. with reliable, consistent and updated information to aid in informed decisions. Smarter technology integration between vehicle and transport infrastructure, vehicle and vehicle,

and user and vehicle exchange of real-time information needs to be explored.

Upgradation of existing technologies to newer technologies, technology integration, scalability and consistent and reliable data collection to address future mobility requirements will be an enormous challenge. Another issue is of data security and privacy associated with the use of communication technologies (mobile device data).

Other challenges include high costs of data handling and storage, enabling tools and technology costs, lack of skills for operation and maintenance and institutional issues (government authorities, public transport operators, communication technology operators, users, etc.).

Way forward

As a way forward for cities to prepare their respective SCPs, pan-city initiatives should explore the potential of leveraging existing ITS applications and integration of the same on a common platform. The focus should also be on the creation of a consistent database at the city level that can serve as a basis for decision making in urban transport infrastructure planning (mobility planning for goods and passenger, public transport planning, capturing socio economic parameters, understanding the activities of the people, aid in revenue generation, reduce congestion, reduce travel uncertainty, reduce energy consumption and emissions, ensure safety etc.).

The data feeds from different applications will aid in understanding travel patterns, and determining the effectiveness of different initiatives like traffic demand management, infrastructure performance and fore seeing complex urban challenges.

Implementation of an integrated ITS system in India has many challenges but it nevertheless has the potential of not only being a data repository for the city, but also providing a platform where analysis and computation can take place to identify solutions for complex urban transport systems, to aid evidence-based decision making and implementation.

Anantha Lakshmi P., Senior Researcher and Sujaya Rathi, Principal Research Scientist are with the Center for Study of Science, Technology and Policy (CSTEP), Bangalore.

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The Sparkling Juicy Story

South African expat Michelle Bauer's Good Juicery brand in India is becoming a hit. Find out what she is doing right and her future plan

By Uma Haridas

The Good Juicery is the brainchild of South African expat Michelle Bauer who recognized the need for premium healthy drinks in her pursuit of the good life. The drink was an alternative to the fruit drinks currently available in the Indian market with "surprisingly low juice content and are packed with ingredients that you don't need, don't want or can't pronounce."

Good Juicery sparkling fruit drinks have been developed with lot of thought and care. They are currently available in three flavors – guava, apple and passion fruit.

Good Juicery is committed to doing their bit in preserving the environment. Right through from production to consumption, every effort has been made to limit the impact on the planet. **They plant 1 tree for every 1000 cans of sparkling fruit drinks sold. Also, they promote recycling by working with local groups, such as Rebirth to ensure as many cans as possible are recycled** and using recycled paper in business cards, posters and stationery.

In order to reduce carbon footprint, harvesting of rainwater and treatment of waste water are standard practices for their manufacturer. As the drinks don't need refrigeration for storage their carbon footprint is reduced further. Their sparkling fruit drinks are made in India and, as most of the ingredients are sourced locally.

What motivated you to launch this business?

Moving to India in the summer of 2011, we were struck by the lack of packaged beverage options available in both restaurants and retailers. Specifically we were looking for natural, non-alcoholic, fruit-based options – like the wide variety we were used to abroad. I certainly never set out to be an entrepreneur; however after identifying there was an opportunity in the market, we had to take it. It's been an exciting journey with extreme highs and some lows – however we have not looked back.

What were the challenges faced in the journey from conception to execution?

Luckily the reception to our sparkling juices – from taste to branding, has been fantastic. We are lucky to have wide appeal – so are stocked in some great 5 star hotels, restaurants and high-end retailers across the country. However, I would say that therein lies our biggest challenge - which is to get our distribution in the different markets to operate smoothly, while being based in Pune.

What is your business model?

We use a contract manufacturer who makes our sparkling juices in small batches to our recipe and specifications. We also employ distributors in the different markets who make our deliveries and collect the payments. We maintain the sales, marketing, research and development, production management etc in-house.

What is your relationship with the supply chain, example farmers?

Maintaining fair practices is very important with all our vendors or suppliers – this is a basic tenet of our company.

How is the demand for the product?

We have had a wonderful reception to our sparkling juices – in addition to the metros, we now supply Nasik, Dehradun and Kerala too. We have seen year-on-year growth, as we go deeper in existing markets and open new ones.

What are your future plans for the brand?

In the next few months we will be launching our fourth flavor. We also have plans for a new and exciting range of juices, which have been developed as a direct result of demand from the market.

Clean, Green and Style

Savitha Rao is on a mission and that too with style. She believe style and responsibility can be blended nicely. Her firm Clean Planet produces eco-stylish products to inspire consumers across the globe to buy responsibly. It offers a wide range of eco-products including Eco Veggie bags, Trendy Eco Tote bags, Contemporary Eco Sleeves, Eco Home Placemats and Eco Pouches. Here's an excerpt of her chat with Uma Haridas on how she did it

What motivated you to shift from the corporate field to be an entrepreneur?

I always knew I would be an entrepreneur at some point. In my corporate career I was in the field of textiles. As an entrepreneur I wanted to get into a business that had 'do-good' embedded in it. So I actually explored getting into production of medicinal herbs, orchids. **One day a friend gifted me a copy of 'Business as Unusual' by Anita Roddick. It's a hugely inspiring book. It finally dawned on me that one can do good through any business** (excluding ammunition, alcohol, tobacco etc).

I could combine my love for fabrics with the creation of a better world. Initially we started out with apparel and accessories for the Japanese market where we pioneered a whole range of products – including the inclusion of high quality hand embroidery into contemporary apparel.

Then one day I read an article on the North Pole melting. Something in that moved me deeply. And I decided to get directly into the environment space. That is the origin of 'Clean Planet'. In a way Clean Planet was inevitable for me.

The company's credo is creating products with a soul at a reasonable cost. From a line of cloth totes to the pioneering Swachh Citizen bags, the brand is constantly innovating while getting more stylish and plans to add new products into its home decor segment. Swachh Citizen and India Kuch Kar are initiatives taken by Clean Planet with its passionate commitment towards a clean environment.

No one can do everything, but everyone can do a LOT is the mantra at Clean Planet says Savitha Rao, founder and director, Clean Planet

How do you ensure sustainability in your vendors and supply chain?

- We source eco friendly fabrics, the dyes, prints on cotton are AZO free.

- We design products to optimize the use of the materials
- We do not use any Velcro, plastic zips, foam or rexin in any of our products – even though the eco alternatives we use make our products more expensive.
- We train our vendors to minimize waste during production.
- Smaller panels generated during the production are made into creative, high quality products
- We do not use individual poly-bag packing for products
- Packaging is reused extensively
- Material movement is optimized

What has been Clean Planet's journey so far and impact on environment?

It is been an amazing journey with all the thrills of a rollercoaster ride. What has been constant is the conviction that each one of us must do our daily bit for the environment. And we are committed to make it easy, stylish and affordable for people to go eco-friendly .

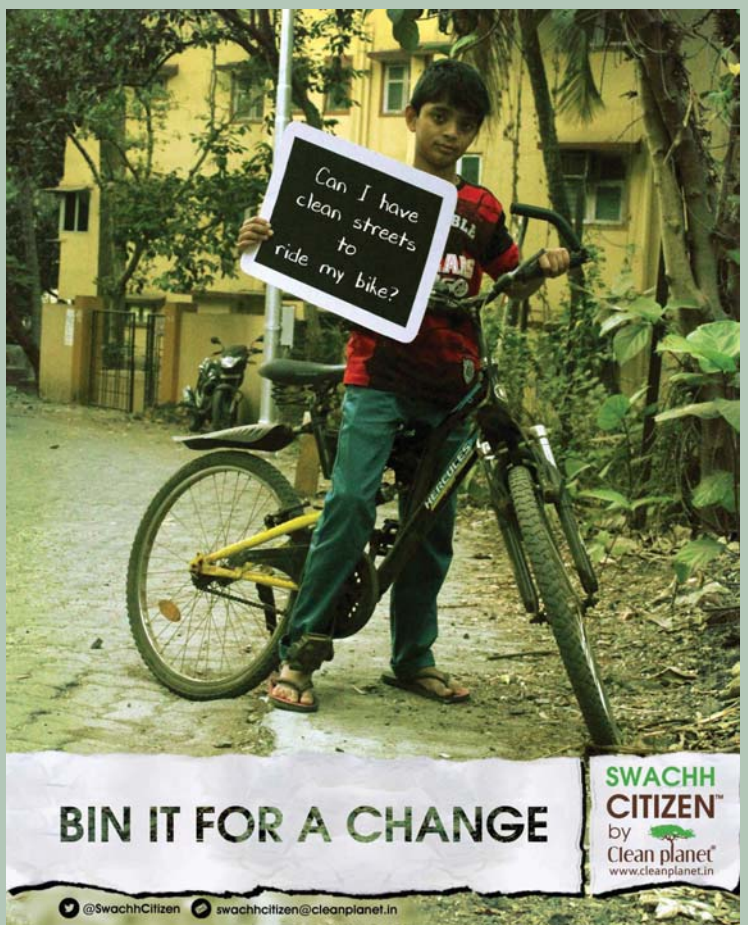
Some of our products are pioneering. e.g the Eco Veggie bag that helps to eliminate plastic from the refrigerator. Initially we had a tough time communicating the product to people. Now, we have customers across India who regularly buy it.

What's your advice to future change makers?

Vision, conviction and perseverance are essential – especially in the environment space. This is not an endeavor for the faint-hearted.

Build a network of people – friends, associates who will inspire and challenge you. Especially in the tough times a robust network will help you bounce back faster.

Actively earn. An entrepreneur today needs to know a lot more. Every discipline is evolving. Social media presence and online marketing is important for every entrepreneur to understand.



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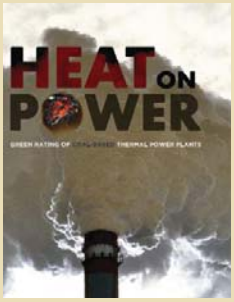


Heat on Power

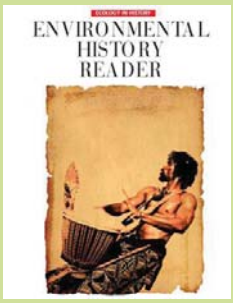
by Abhishek Rudra, Angeline Sangeetha, Priyavrat Bhati, Sai Siddhartha, Soundaram Ramanathan, Chandra Bhushan, Sanjeev Kumar Kanchan, Centre for Science & Environment Publication, 2015

Green rating of coal-based power plants

Coal plays a critical role in our energy mix, providing over 70 per cent of India's electricity supply. It is likely to remain a mainstay for several more years, given India's immense power needs and domestic availability of coal.

But coal is also the dirtiest of all fossil fuels. It burns to produce emissions that are a leading anthropogenic source of global warming, acid rain, smog and toxic air and water.

We need to use coal efficiently to reduce its environmental costs. CSE's Green Rating Project analysis of India's coal-based power sector paints a sobering picture but also offers recommendations for improving the environmental and social performance of this important sector.



Environmental History Reader

by Kaushik Das Gupta, Down To Earth Publication, 2015

The understanding of our ecosystem would be incomplete without understanding its past. Hence CSE's latest book is invaluable as it helps you figure out some present day environmental concerns from a historical perspective.

The past bears heavily on our forests, villages, cities, even air, water and the atmosphere. Current environmental concerns — climate change, conservation and pollution — bear the imprint of the past.

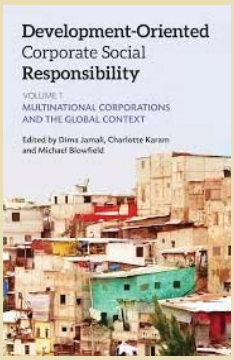
It takes us to early debates on pollution, patents and industrialisation. It highlights instances of biopiracy and bioterrorism when these words had not found a place in the English dictionary and shows how ecology played a role in the rise and fall of ancient civilisations. It reveals the environmental underpinnings of warfare, diplomacy, even music and celebration.

Corporate Stewardship: Achieving Sustainable Effectiveness

by Susan Albers Mohrman, James O'Toole and Edward E. Lawler III, Greenleaf Publishing, July 2015

Stewardship entails a profound understanding and acceptance of the challenges that result from the organizations interdependence with the societal and ecological contexts in which it operates - and embracing the challenges to be a force for building a viable future. Corporate metrics of success, business practices, and organizational designs require for the task of addressing these emergent challenges. Such an agenda represents fundamental change for the corporate world, and even the most advanced corporations consider themselves to be in the starting block of this transition.

This book, written by the leading thinkers in sustainabiity research, provides practical guidance on how companies can resolve the paradoxical challenges they face and what they need to become. How can they be at the same time profitable and responsible, effective and ethical, sustainable and adaptable? It explores what businesses are doing, what they can and should do to effectively respond to external challenges, and focuses on how leaders can create cultures, strategies, and designs far beyond "business as usual".



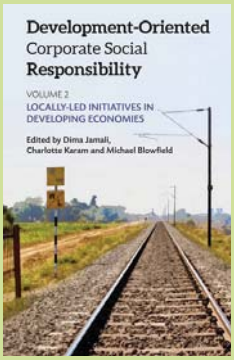
Development-Oriented Corporate Social Responsibility: Volume 1 (Multinational Corporations and the Global Context)

by Dima Jamali, Charlotte Karam and Michael Blowfield, Greenleaf Publishing, July 2015

Globalization and the professionalization of Corporate Social Responsibility (CSR) have led to a surge of CSR activities claiming to support development across the globe. In this two volume series, the editors explore this claim through nuanced debate about the potentialities, limitations and threats of development-oriented CSR in the developing world at both the global and local levels.

Volume 1 explores whether there is a genuine possibility for corporations to contribute to development through CSR activities. With corporate reach spreading into every corner of the globe, this is a timely contribution presenting cases from developing countries spanning multiple continents. It explores the multi-level and multi-stakeholder dynamics involved in shaping the complex interface between multinational corporations (MNCs) and possibilities for CSR-related development. The chapters highlight the potential for MNCs to spread best practice and complement the role of governments in bridging governance gaps and spearheading capacity building efforts. But they also highlights serious reservations, stemming from isolated assessments, limited appreciation of the complexities of context, and the permeation of a northern agenda that marginalizes local voices.

Within the larger debate on the merits and evils of globalization, this volume captures the mixed record of MNCs in promoting effective development in those parts of the world where it is most needed. This important series will be the reference source for academics, practitioners, policy-makers and NGOs involved in development-oriented CSR.



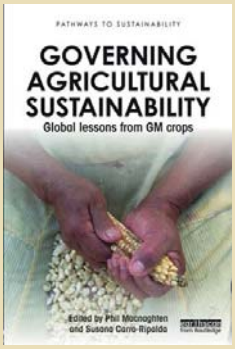
Development-Oriented Corporate Social Responsibility: Volume 2 (Locally Led Initiatives in Developing Economies)

by Dima Jamali, Charlotte Karam and Michael Blowfield, Greenleaf Publishing, July 2015

Globalization and the professionalization of Corporate Social Responsibility (CSR) have led to a surge of CSR activities claiming to support development across the globe. In this two volume series, the editors explore this claim through nuanced debate about the potentialities, limitations and threats of development-oriented CSR in the developing world at both the global and local levels.

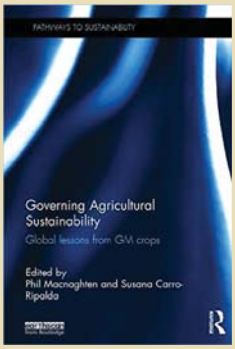
Volume 2 provides a platform for localized perspectives on CSR in developing countries across the globe. The editors bring local context and business to the forefront and highlight the efforts spearheaded by indigenous actors from within the developing world. The chapters present insights from developing countries through successful and less successful examples of locally-led CSR efforts. Together, these perspectives capture the complex paradoxes of CSR in developing countries and highlight common features in national institutions across the developing world, such as weak political and regulatory institutions, that shape local CSR initiatives and often limit its developmental impact.

The editors argue the need to embrace partnership models that leverage the strengths of different actors to promote effective development and tackle the complex challenges facing the developing world. This important series will be the reference source for academics, practitioners, policy-makers and NGOs involved in development-oriented CSR.



Governing Agricultural Sustainability: Global lessons from GM crops (Pathways to Sustainability)

By Phil Macnaghten and Susana Carro-Ripalda, Routledge, July 2015



Although GM crops are seen by their advocates as a key component of the future of world agriculture and as part of the solution for world poverty and hunger, their uptake has not been smooth nor universal: they have been marred by controversy and all too commonly their regulation has been challenged as inadequate, even biased.

This book aims to understand these dynamics, examining the impacts of GM crops in diverse contexts and their potentials to contribute to sustainable agricultural futures. **Part 1 draws on research from three global 'rising powers' – Brazil, India and Mexico – exploring the views of scientists, farmers and publics.** Using a diverse array of ethnographic and qualitative methodologies, the book examines the dynamics that have underpinned the controversy in three diverse geo-political contexts, the manner in which dominant institutional framings have been closely aligned with the interests of powerful elites, and the multiple ways in which these have been resisted through local, symbolic and material practices. **Part 2 comprises a series of short comment pieces from 11 leading social and natural scientists responding to the question of how to develop a policy framework for the responsible innovation of sustainable, culturally appropriate and socially just agricultural GM technologies.**

This innovative book offers new insights for researchers and postgraduates in Science and technology studies, Agro-ecology and Environmental Studies, Development studies, Anthropology, Human Geography, Sociology, Political Science, Public Administration, Latin American studies, and Asian studies.

"Distilling a decade of research at UK institutions, this wide-ranging collection wisely shifts our attention from the disputed technical properties of GM crops to the kinds of politics needed to accommodate GM agriculture on a global scale. If one book could prod the GM debate out of its current sterile stalemate, then this would be it."

– Sheila Jasanoff, Pforzheimer Professor of Science and Technology Studies, Harvard Kennedy School, USA

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http://www.siib.ac.in/programmes.aspx

Events

Edu Summit 'Moving towards Knowledge based Economy - Basic Imperatives and Agenda for Reforms'.
5th August 2015, ISB Mohali Campus
http://www.cii.in

Eleventh India Innovation Summit 2015 "Realizing the National Dream"
06-07 August 2015, Hotel ITC Royal Gardenia, Bangalore
http://www.cii.in

Massmerize 2015
August 07, 2015, The Lalit, Mumbai
Contact: Megha Goyal, megha.gupta@ficci.com

Master-Class on Branding & Innovation
August 08, 2015,Mumbai
Contact: Mr. Ankit Misra, ankit.misra@ficci.com

2-Day "Technology Conference and Exposition on Electroplating" (TCEE 2015) - "Trends & Challenges in Electroplating Industry"
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2nd Edition of the Conference on Building World Class Manufacturing Automation & Robotics: Sustainable, Scalable and Safe
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http://www.cii.in

Advanced Training Programme on Energy Efficiency
13 & 14 August 2015, Hyderabad
http://www.cii.in

Conference on SMART Logistics 2015
21st August 2015, Hotel Grand, New Delhi, CII - Institute of Logistics
http://www.cii.in

FIBAC 2015 (2 Day Event)
August 24, 2015, Mumbai
Contact: Apoorv Srivastava, apoorv.srivastava@ficci.com

HP Software DevOps 2015
Bangalore, Aug 26 2015 | Mumbai, Sept 10 2015
http://h71056.www7.hp.com/world-tour/mumbai/overview

5th National Conference on Agrochemicals (2 Day Event)
August 27, 2015, FICCI, New Delhi
Contact: Charu Smita, charu.smita@ficci.com

FICCI HEAL 2015 : "India's Healthcare: Time for Paradigm Shift" (2 Day Event)
August 31, 2015, FICCI, New Delhi
Contact: Sarita Chandra, sarita.chandra@ficci.com

Smart Cities Landscapes 2015
September 10-11, 2015, New Delhi, India
http://www.infoxg.com/smart-city-landscapes2015.php?event_name=Smart%20City%20Landscapes%202015

Pre-conference Workshop
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08-09 December, 2015
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