

YUKTIX



**Smart
Environment
sensing**



Sensor networks

- Sensors help you collect data from the physical world
 - Agriculture: Weather sensors
 - Air: Pollution sensors
 - Machines: On/Off, Vibration
 - Accelerometer/Pressure/Light in your phone
- Sensor networks allow you to collect data from a huge number of sensors in one place. Scale brings in interesting dynamics.
- Examples
 - Agriculture, Urban infrastructure, Asset monitoring in Manufacturing, Green Buildings, Elephant scanner, GPS for stopping pilferage ...

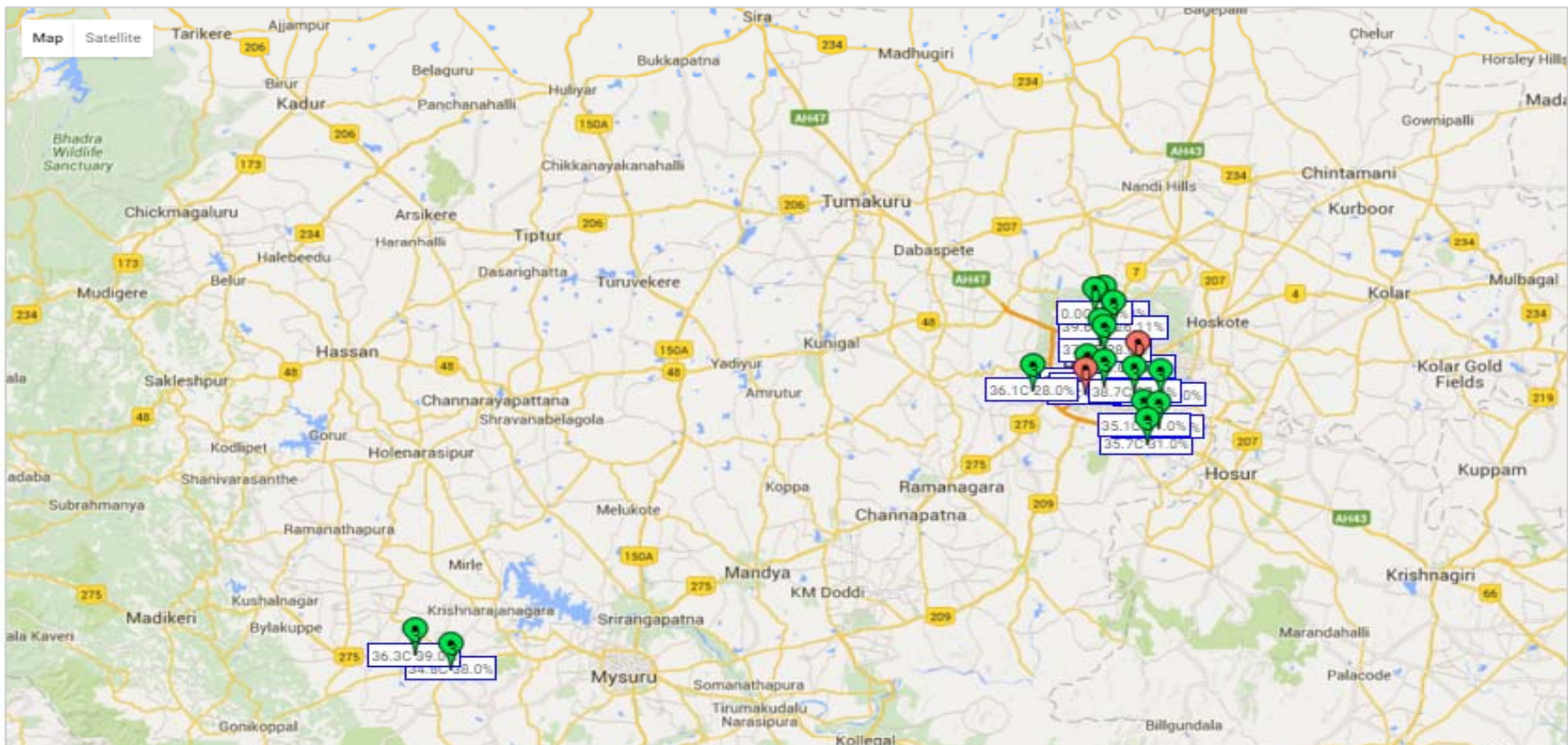
Environment monitoring

- Better data from Environment = Better decisions
- We are extending the idea of pervasive computing to our environment
- Concrete examples? Can we do something today? Will someone pay?
- Application to Agriculture, Smart Infrastructure and continuous monitoring domains.
- About Yuktix.

Bangalore network: Weather Station



Bangalore Open Weather Network



www.yuktix.com/m/aws

Installations



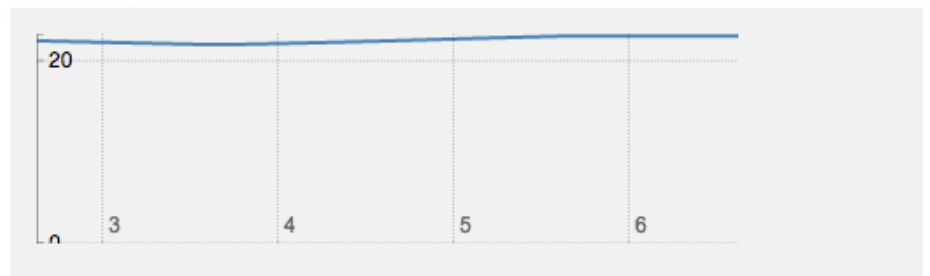
IASRI potato late blight forecast model

select station

Total Rainfall in last 10 days	107mm
Average temperature (last 5 days)	22.3C
Min. Temperature (today)	19.8C
Do we have chance of late blight today?	Yes

Date	Avg. temperature (C)
2-Aug-2016	22.15
3-Aug-2016	21.74
4-Aug-2016	22.14
5-Aug-2016	22.66
6-Aug-2016	22.68

Temperature



Recipe to drive 10x effects in sensing?

- Recipe?
 - Cost effective sensors – better coverage/ continuous monitoring/Pervasive.
 - Better data infrastructure – everything is connected. 100 INR DATA SIM
 - Network of networks and more communication options (smart city example/ WB in UK)
 - Designed to the need
 - Better software (computing). No one needs data dumps.
 - Democratization of technology (Not everyone can afford Siemens BM!)
 - Data vs. instrument view. Instrument should be easy and go into the background.
 - Isn't this all done already? Not all problems are equal (Soil NPK?)



Our IP / New things

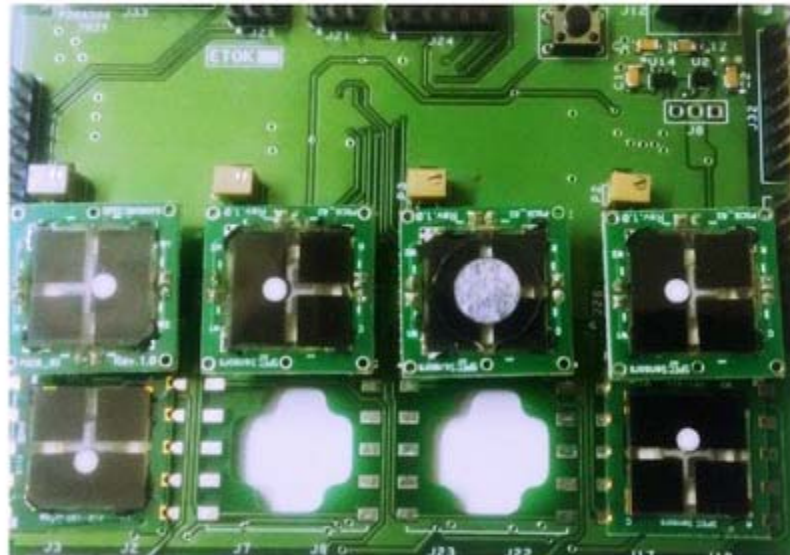
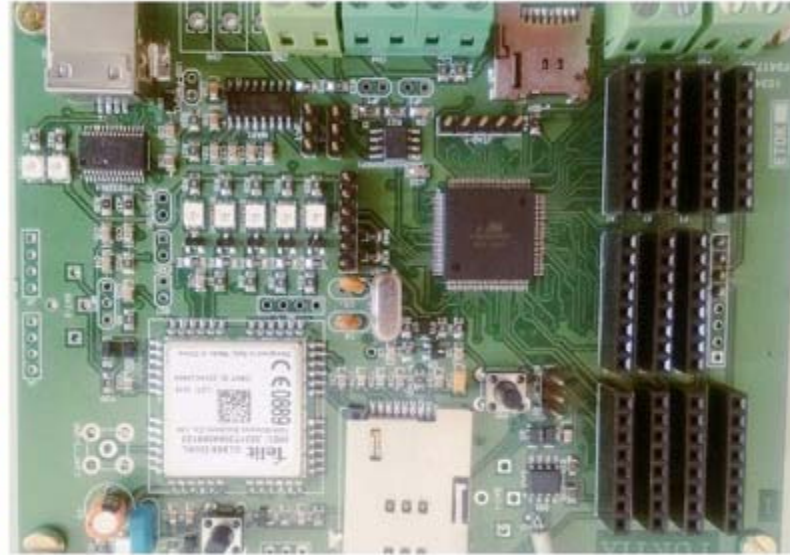
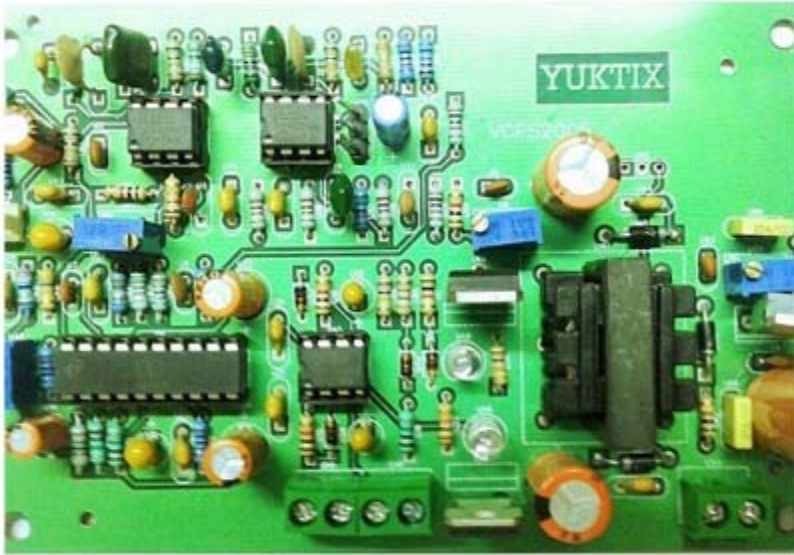
- Can we have an infrastructure where I can just plug-and-play new crops rather than doing them from scratch?
- Can we just drop temperature sensors for Potato and Leaf wetness for Tea?
- Greenhouses in India – need to leapfrog sensing. Can I design a smallish 2000 INR unit for sensing.
- Warehouses Poisonous gas monitoring
- Cold storage/ Grain Silos/ Ripening chambers/ Livestock RFID
- Pollution Monitoring

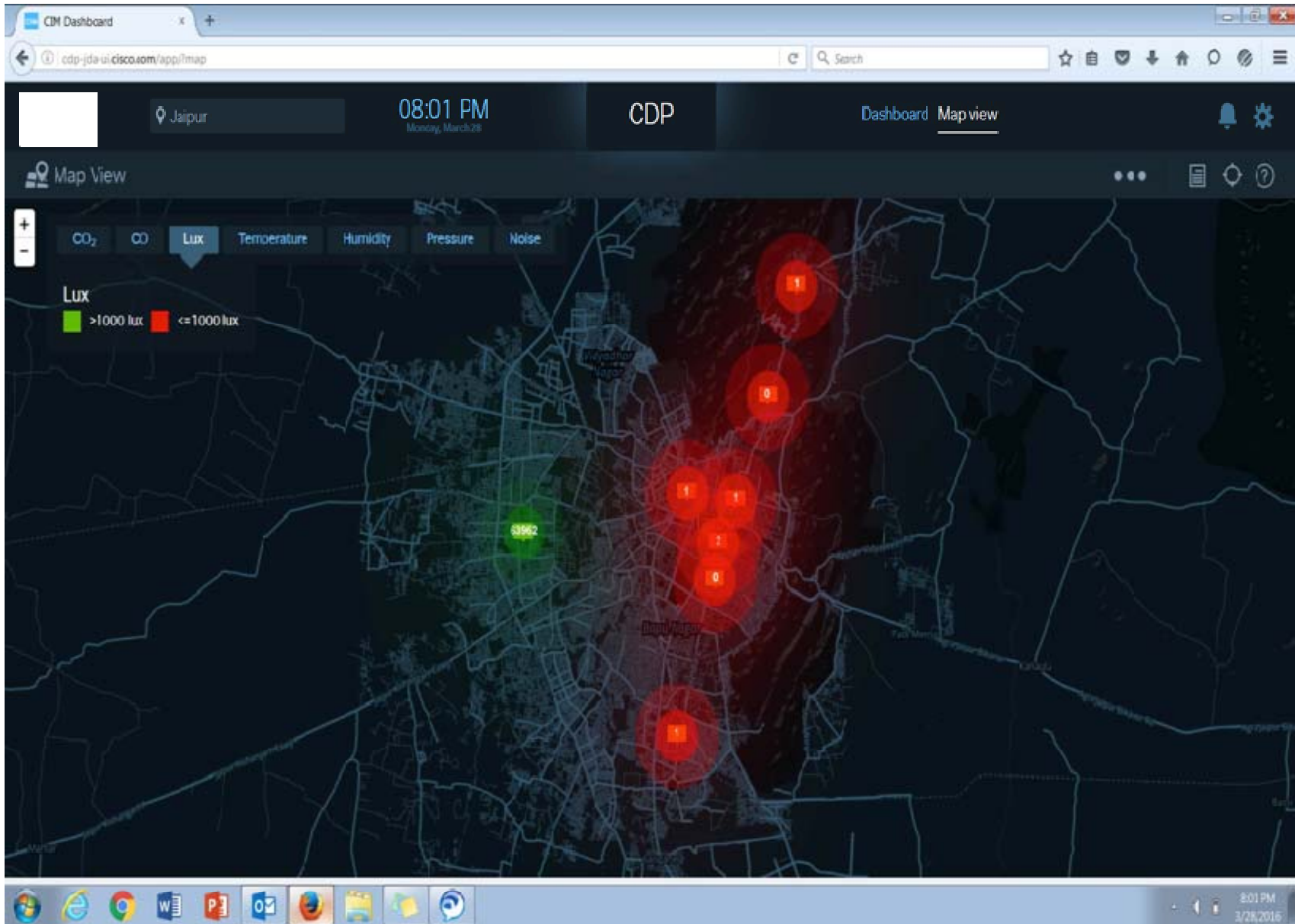


Yuktix Technologies

AIR QUALITY STATIONS

Yuktix Designs





Yuktix offering

- New class of Sensors – Ambient Noise sensor design
- Sensors interfacing + H/W Design expertise
- Core Software: Data protocols, software on sensor devices, software for cloud integration. Software for data archiving / alerts etc.
- Device management, tracking and data collection interfaces. View your devices on a dashboard.
- Solutions on top – weather stations, air quality stations, Lake dashboard.

clients



Team



Rajeev Jha. 16 years in Industry. Rajeev worked for Oracle, AOL, Everypath, Indegene and Citrix. IIT Kanpur 1999, PGSEM from IIMB



Ashok Verma. 35 years of Hardware design experience. IIT Kanpur 1980. Philips..



Shailendra Singh. Embedded Engineer from UPTU. Part of Department of Defence SuryaYaan Fixed wing Drone project.



Arun. 25 Years of Industry experience. IIT Kanpur 1990. He worked for APC, Schneider and ITI.

Media Coverage



[The Economic Times – Smart City Initiative](#)



[The Hindu – Understanding the weather](#)



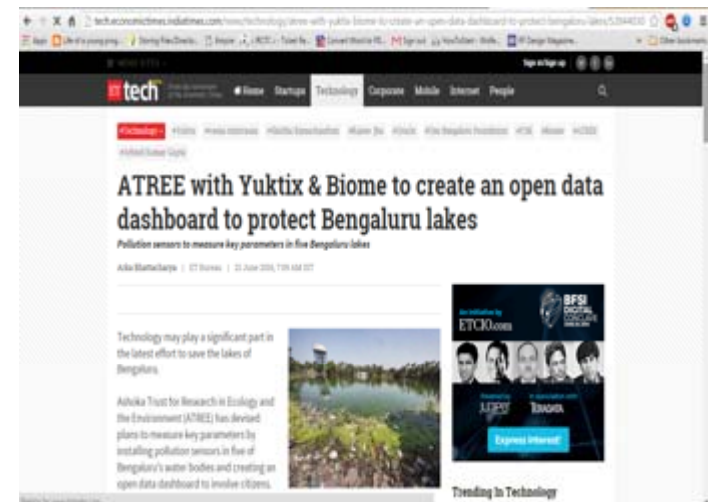
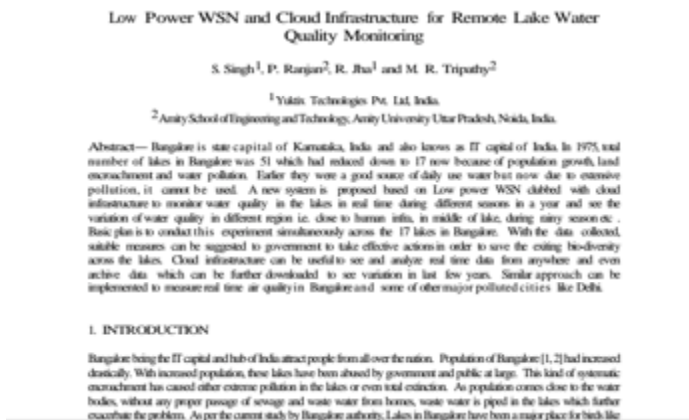
[Bangalore Mirror – The weather trackers](#)



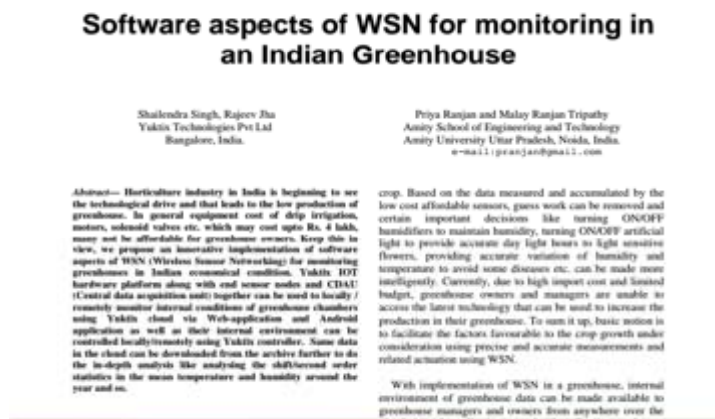
[Voice And data Magazine](#)

Published Papers

1. Low power WSN and Cloud infrastructure for remote lake water quality monitoring – Funded by Oracle CSR in collaboration with ATREE and BIOME environmental Solutions ([Link](#))

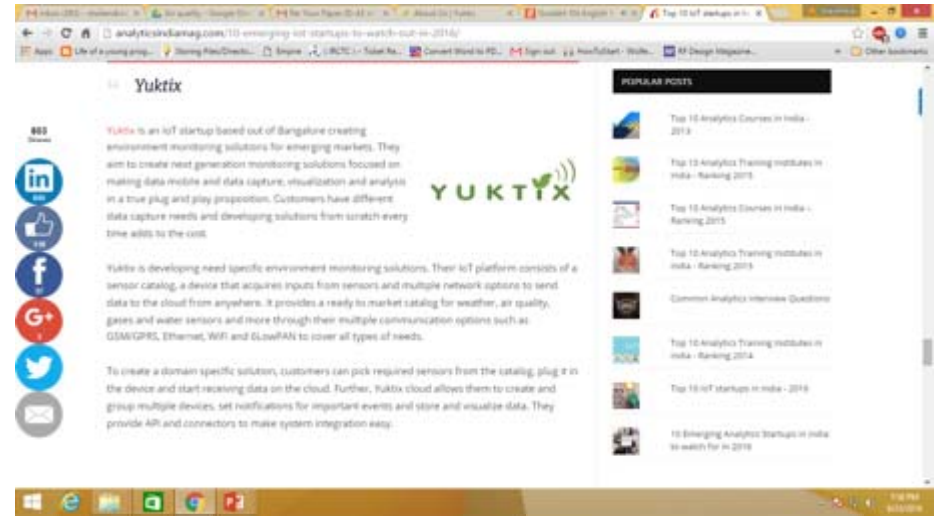


2. Software Aspects of WSN for monitoring in an Indian Greenhouse – CICN 2015 , IEEE.



In News

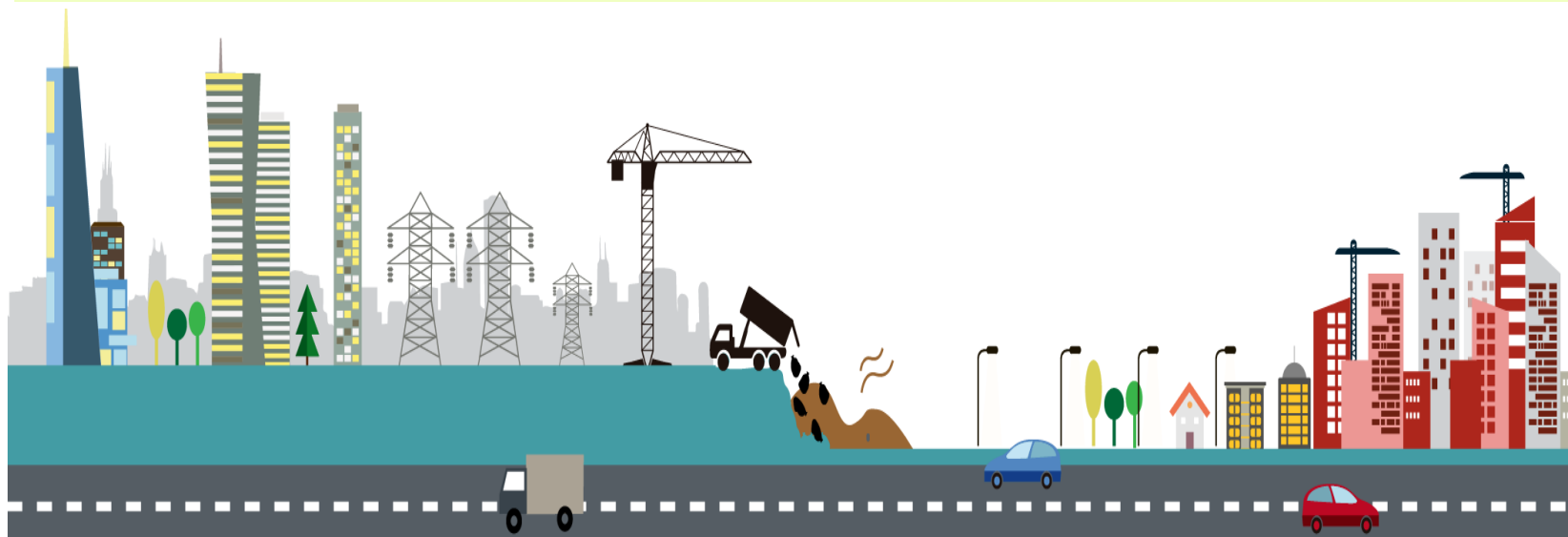
- Top 10 IOT companies in India – Analytics India magazine.
- Nasscom – Emerge 50 Winner – 2015



Applications



INDUSTRIAL	URBAN/GREEN BUILDING	ENVIRONMENT SENSING	MINES, OIL AND GAS	AGRICULTURE	ENERGY AND INFRA
<ul style="list-style-type: none"> • Remote Control and Automation • Industrial Interfacing • Cold storage gas sensing 	<ul style="list-style-type: none"> • Car Parking Ventilation • Autonomous HVAC control and automation • Outdoor lighting on Mesh Network 	<ul style="list-style-type: none"> • Landfill Gas monitoring • Air Quality Monitoring 	<ul style="list-style-type: none"> • Gas Detection • Methane leak detection 	<ul style="list-style-type: none"> • Weather Monitoring for crop health • Post Harvest ethylene monitoring • Smart Greenhouse automation 	<ul style="list-style-type: none"> • Substation Monitoring • Wireless sensor networks for structural health of bridges



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