

Process Documentation Report
on
Water Hackathon Bangalore 2011

**Organized by the Indian Institute for Human Settlements, the India Water Portal and the
Water & Sanitation Programme of the World Bank**

October 21st - 23rd 2011



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DEFINITION

A Hackathon is defined as “an intensive marathon of brainstorming and programming, where software developers and designers collaborate to create new tools for solving a set of problems.”

A Water Hackathon, therefore is a “Hackathon dedicated to solving water problems facing developing countries”, such as:

- Access to safe drinking water and adequate sanitation
- Flooding and drought (i.e., climate change issues)
- Irrigation and watershed management
- Environmental pollution

GENESIS

In June 2011, the World Bank contacted the Indian Institute for Human Settlements to help organize the Water Hackathon in Bangalore.

“New ideas, better open data and innovative instruments are needed to respond to the world’s water challenges. In search of just that, the World Bank and its partners are joining forces in order to seed a new community of software developers, designers and water experts interested in co-creating new solutions to water-related problems.”

The Water Hackathon was to be held between the 21st and 23rd of October 2011, “with multiple (now 10, including Washington, Cairo, Lima, Kampala, Lagos, Nairobi, Tel Aviv, Toronto and London, besides Bangalore) global locations bringing together software developers, designers and water experts to solve – “hack” – real-world water problems.”

A. Suryanarayanan from IIHS was the event lead for the Bangalore event. Representation from the water sector was organized through the Water and Sanitation Programme of the World Bank, Delhi and the India Water Portal, Bangalore. A launch meeting was held in the IWP office in August, with representation from technology communities in Bangalore like Mobile Monday, Hasgeek and Nasscom. Corporate IT sector was brought in through HP, one of the main sponsors of the event.

SNAPSHOT

Dates	August 2011	Preparation meeting in Bangalore
	Sep 10 th	1 st brainstorming session on problem identification in Bangalore
	Sep 27 th	2 nd brainstorming session on problem identification in Delhi
	Oct 21 st	Reception and briefing event in Bangalore
	Oct 22 nd - 23 rd	Hackathon event at IIIT-B campus in Bangalore
Number of problems		Over 40 problems identified and 1-page descriptions received
Problems shortlisted		14 problems published for hackers to address
Number of registrations		197
Number of 'Hackers'		94 in 22 teams
Number of winning teams		6 winning teams chosen through peer-review and jury moderation
'Water Ambassadors'		4 participants nominated for World Bank 1-year internship
Budget		\$6000 sponsorships + In-kind contributions

PARTNERS AT A GLANCE



ACTIVITIES

The activities for the Water Hackathon were divided over 3 phases:

- Phase I: Workshops and Brainstorming through September to identify problems in the water sector in India.
- Phase II: The hacking event over 3 days in October – 1 day for the reception and briefing on identified problems; 2 days of hacking and solution finding.
- Phase III: Real-world implementation of chosen solutions.

PHASE I – BRAINSTORMING & PROBLEM IDENTIFICATION

Two workshops were held with water experts invited by WSP, IWP and IIHS. The first session was held in Bangalore in the 2nd week of September and resulted in the identification of 34 problems which could be addressed. The second brainstorming session was held at the WSP office in Delhi at the end of September and resulted in another set of 35 problems being suggested. The water sector people who suggested these problems were deemed the 'owner' of the problems and were requested to submit 1-page summaries on the problem specifics, including a possible solution and the scope/limitations.

Over 40 full-fledged problem statements were received by the beginning of October. Since some of these problem statements were common or overlapping, it was decided to focus on 14 problems which were edited and recompiled to create diversity in terms of scope and applicability. A summary of these 14 problems is attached as a PDF Document. This document was handed out to the hackers at the event.

Some of the problems identified were:

- Service delivery, customer complaint and redress
- Low cost water quality tests and measurement
- Public access to maps and data on water quality
- Locating and rating of public restrooms
- Inconsistent and unpredictable water supply to slums

PHASE II – THE EVENT

The event was spread over 3 days. The first day was a briefing and reception event in a central city location in Bangalore and the coding marathon was held over the next 2 days in Electronic City. The main organizers from IIHS were Suryanarayanan A., Sathish Selvakumar, Raghavendra Raju and Swastik Harish, with support from Rajshekar, Kailash, Penzang, Vaishali, Amogh and Shanal.

Day 1 – 21st October Bangalore

The Water Hackathon Bangalore was kicked off with a dinner and reception event on Friday the 21st of October at the Ista Hotel off MG Road Bangalore. This event was primarily organized by the Water & Sanitation Programme of the World Bank. It included presentations by experts in the water and IT sectors from private and public organizations:

1. Vandana Mehra (World Bank's Water & Sanitation Program)
2. A Suryanarayan (IIHS)
3. Naimur Rehman (One World)
4. Arun Goel (Ministry of Urban Development)
5. Christopher Juan Costain (World Bank's Water & Sanitation Program)
6. Jose Luis Irigoyen (World Bank)
7. Jeff Martin (Keynote Speaker, Tribal Tech & Mpowering)
8. Sam Pitroda (Advisor to the Prime Minister)

The event was concluded with the presentation of the 14 problems to the participants and dinner. Teams of hackers identified the problems in the water sector they want to address, using the mobile technology of their choice.

Day 2 – 22nd October Bangalore

The coding began on the morning of Saturday 22nd of October at the Electronic City Campus of the International Institute of Information Technology Bangalore (IIIT-B). The teams hacked through the night of Saturday and presented their solutions to an eminent jury from the private and public sectors on the afternoon of Sunday the 23rd of October 2011. There were observers with experience in the water and IT sectors who were present at the event. These observers included:

1. A representative from LIRNEAsia, a think-tank in the development sector from Colombo was in Bangalore to witness the event.
2. Venkat Mangudi Consultants is creating the infrastructure for sharing of the code base

produced during the event. They will also be testing a collaborative cross-geography model to co-create code.



Various incentives were worked into the program:

1. 'Swag bags' with t-shirts, mugs, notepads and pens were given to each participant.
2. Ista Hotel & Pepsi provided snacks and soft-drinks to the participants through both days and the night.
3. A yoga session was conducted for the hackers on Sunday morning.

Day 3 – 23rd October Bangalore

There were 197 registrations in all on the website. 94 “hackers” in 22 teams were present at the event. Eventually, 20 teams were able to present their ideas.

The presentation of the solutions took place on Sunday. The awards were decided through a peer-review process which was subsequently moderated by a jury. Six teams were given exciting prizes like portable hard disks, web-cams, audio-books and dinner vouchers from Ista hotel.

The jury consisted of 5 members:

1. Mr. Juan Costain, Regional Team Leader-South Asia, WSP.
2. Mr. Atul Chitnis, of CyberMedia Group
3. Mr. Mohan Sundaram, IT mentor from IIM-B.
4. Mr. Vishwanath, water sector expert from IWP
5. Mr. Amirthavelraj Rajappa Nadar – Senior Technical Architect from HP.

Dr. A. Ravindra, Adviser to the Chief Minister of Karnataka on Urban Affairs, was present to give away the prizes. The teams that were awarded the prizes were:

TEAM	PROBLEM ADDRESSED	PRIZE CATEGORY
PWX	Long term data from field/projects using SMS	A
Jugaad Sensors	Low cost water quality tests and measurement	A
Prithvi	Inconsistent and unpredictable water supply to slums	A
PeeQ	Locating and rating of public restrooms	B
Hackers for Change	Service delivery, customer complaint and redress	B
S3V2K	Service delivery, customer complaint and redress	B

Details of the winners in the report

Mr. Juan Costain of the WSP World Bank announced the names of the 4 nominees chosen for interviews for the position of 'Water Ambassador' to the World Bank:

- Atul Kulkarni
- Gururaj P
- Rajesh Shah
- Venkat Mangudi

Update – Mr. Venkat Mangudi, an Open Source evangelist has been selected by the World Bank to be the Water Ambassador India.

PHASE III – REAL-WORLD IMPLEMENTATION

The World Bank has announced the names of 4 nominees from amongst the participants who will be interviewed for the position of a 'Water Ambassador'. According to the World Bank communication on this, the Water Ambassador will *'help on a part-time basis to facilitate communication between the water and technology communities and support the follow-up that is too often lacking after Hackathon events. Towards this end, Water Ambassadors will write an article once a month from November 2011 to June 2012 detailing updates from the Hackathon teams. This will ensure both communities are able to track the progress towards adoption of the technology solutions developed at WaterHackathon and allow the World Bank and its partners to provide strategic support when appropriate.'*

The team Jugaad Sensors has been approached by Mr. Vishwanath, a leading expert in the field of ground-water management in India, who had been part of the jury. There is an ongoing dialogue to

implement the teams' ultra-low-cost water quality sensors in the field. Surya from IIHS is helping mentor the team to develop a business plan.

(VERY) SPECIAL MENTION

One of the highlights (read stars) of the Water Hackathon Bangalore was the young hacker **Parthiv Shah**, of team PWX which was one of the teams to win the 'A' category prize. 9th grader in school, all of 14 years old, whiz kid with his macpro, near-professional videographer, and handsome to boot!!

Check out his video of the event at http://www.youtube.com/watch?v=GWXt1jgH7_w

MEDIA EXPOSURE

The event was covered in articles in the print and electronic media:

- DNA did a pre-event article at http://www.dnaindia.com/bangalore/report_software-programmers-water-experts-to-join-hands-to-create-tools-for-mobile-user_1600662
- The Hindu did a post-event press release available at <http://www.thehindu.com/news/cities/Bangalore/article2570002.ece>



- Cybermedia did a post-event summary at <http://www.ciol.com/Developer/Developer/Feature/Create-mobile-web-apps-to-address-water-problems/155758/0/>

NEXT STEPS

- Random Hacks of Kindness, the lead organizer of the global Water Hackathon event has approached IIHS for conducting such events more frequently. These can be in other sectors like Disaster Mitigation, Power & Utilities, Mobility & Transport, besides water.
- IIHS is exploring the possibility of creating a pool of sponsors for such events. These sponsors could help not only in the organizing the event, but also fund the development of solutions into real-world applications.

WINNING TEAM PROFILES

Category A

Team Name	Members	Occupation	Problem Chosen
PWX	Parthiv Shah	School Student	Long-term data from water-related field/projects via sms
	Rajesh Shah	Programmer	
	Vamsee Kanakala	Programmer	
Jugaad Sensors	Yashas Shetty	Faculty at Srishti School of Design, ArtScienceBlr	Low-cost water quality tests and measurement
	Samuel Rajkumar	Independent IT consultant	
	Sujith Kumar	Students at Srishti	
	Mohor Mukherjee		
	Jonathan Wilson		
	Saurabh Levin		
	Ankit Modi		
Prithvi	Animesh Ghosh	Students at IIIT-B	Inconsistent and unpredictable water supply to slums
	Akansha Singh		
	Shefali Das		
	Govind Rao K S		
	Ashrith Kulai		
	Anup Warnulkar		

Category B

Team	Members	Occupation	Problem Chosen
PeeQ	Raghavendra Saboo	Independent Programmer	Locating and rating of public restrooms in Indian cities
	Anenth Guru	Programmer with Ideophone	
	Akshit Mahajan	Intern, DRDO	
Hackers for Change	Pradeep Bhatt	Independent Programmers	Service delivery, customer complaint and redress
	Aswin Kumar		
S3V2K	Vandana Gopal	Programmers with Thoughtworks	Service delivery, customer complaint and redress
	Sadique Ali		
	Kumaran Venkataraman		
	Senthil Kumar		
	Vijayaluxmi Sinha		
	Saket Bisani	Programmer with Arise India	