TECH EDGE
TO THE RESCUE OF
SOCIAL AID

An increasing number of tech-savvy NGOs are relying on big data, data analytics and interactive voice response systems to address issues around health, water and sanitation in the country. The trend has the potential to revitalise the manner in which social change agents can make a mark here.

Debojyoti Ghosh

FOR the pre-school children at the anganwadi in Kadugondanahalli (KG Halli), a thickly populated lower-middle class neighbourhood in east Bangalore, the new year brought a reason to celebrate. The anganwadi, which was often referred to as a pigeonhole lacking basic amenities like sanitation, today boasts of a larger and cleaner classroom, proper toilet and a kitchen, thanks to the Karnataka learning partnership (KLP), a public platform for education which relies on new-age technologies to generate data.

Till recently, the dilapidated condition of the anganwadi remained ignored until the local MLA had access to research reports and precise data on the status of education and the severe-shortage of infrastructure in government schools and anganwadis in his constituency. The data in these reports, which triggered a social change, was compiled and analysed by KLP, a platform incubated at Bangalore-based not-for-profit Akshara Foundation that is among a crop of social impact organisations which are relying on big data analytics and multiple technologies including web based data analysis, visualisation platforms, mobile applications and interactive voice response systems.

Besides Akshara, that works in the education space, there are a host of not-for-profit institutions leveraging technologies in areas like civic issues, health, water and sanitation in the country. The India Water Portal, a website managed by Rohini Nilekani's Arghyam, a charitable trust, provides information and builds communities around water-related issues in the country. The portal serves as an archive of resources, working papers, reports, data, news and events on water. Nilekani currently runs Arghyam, which she has endowed with a ₹150 crore to fund initiatives in water and sanitation. Similarly, Janaagraha's IchangeMyCity is a locational online social-networking platform, that works for civic engagement in Bangalore. The online social networking site provides a platform for people to connect with their elected representatives and civic agencies.

The KLP framework is using big data analytics for its research reports that has impacted 250,000 children in Bangalore and covers close to 700,000 children in Karnataka. Over the next three years the platform aims to touch over 1 million children and reach out to over 2,000 elected representatives at multiple levels in the government and nearly 2,000 educators supporting public schools and pre-schools across the country.

"Our goal is to create simple, intuitive and useful interfaces to data collection and data insight for the education ecosystem. All of our work is built on open-source technologies by a seven-person in-house technology team. We do, from time to time, outsource some work, such as design, to external experts," says Ashok Kamath, chairman, Akshara Foundation.

Based on the report generated by KLP, enrollment of students at the anganwadi in KG Halli has seen a sharp rise of 15 students in a month post the renovation recently. At present the anganwadi has 40 students in the age group of 3-6 years.

Bangalore-based Arghyam points out that it is leveraging big data by taking government data sets, scrubbing them and visualising them; especially on sanitation thereby impacting on data policy itself as to how should data be collected by government. "We have invested in the data over the last three years and have managed about 300 data sets. Our data cover 80% of what is available. The challenge is the quality of the data," says Arghyam CEO Mala Subramaniam, adding that the infrastructure of data is limited and to make sense of it is lacking in the NGO sector right now.

"For sanitation all the data is available on the Nirmal Bharat Abhiyan at one place. We have spent a lot of time in understanding what are those tables, how those tables get documented and updated and put up visualisation of that data community," adds Subramaniam.

Last year venture capitalist and Silicon Valley-based entrepreneur Karl Mehta launched CodeForIndia, a global community of software professionals who develops tools to address issues related to education, water, health and sanitation. The venture which is currently focused on Indian issues has plans to take it globally.

Shridhar Venkat, executive director, with Akshaya Patra Foundation feels technologies like big data gives an access to people to analyse social change and its impact. "It can have a real impact on social capital in terms of public policy, governance and social science among others. KLP is a unique initiative and a great platform to bring in social change as it introduces transparency and accountability at all levels," he says.

Looking at the increasing need of latest technology in the not-for-profit sector, the IT-BPO trade body Nasscom also runs a training programme called ConnectIT that enables NGOs to learn and adopt various technology to enhance their network.

Kamath of Akshara Foundation points out that given a constraint on resources, data driven decision making can help target resources better and more efficiently. "Crowdsourcing, for all its flaws, allows data collection on a scale that is not otherwise feasible. While care should be taken to ensure the quality of these responses, assuming one has a very large number of responses, one can create indexes of quality to verify such data being received via crowdsourcing," says Kamath.

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ILLUSTRATION: SHYAM

Solving social issues through technology

Aravind Sitaraman

AS INDIA launched the Mangalayaan project recently, it joined an elite group of nations in the world over taking even Japan and China. Naysayers have castigated the ₹450 crore-project as a pathetic attempt by the country to be counted as an emerging superpower. They say that India should focus more on immediate issues dealing with mosquito borne diseases and alleviate poverty of millions of Indians.

India does have millions below the poverty line and does suffer from serious shortage of essential services. However, this does not mean that we cannot make scientific progress until we solve the myriad of social issues. When you take into account that Mumbai alone spends over ₹1,000 crore on crackers every year, these arguments seem pessimistic, self-defeatist, and parochial. While the Mangalayaan project will propel our understanding of our universe, it will also increase our institutional learning of fundamental mathematics, chemistry, and physics, it will enhance our application of mechanics, metallurgy, engineering, and countless other applications.

India has never had difficulty in figuring out high technology. Years of scientific isolation from Cold War politics or sanctions against nuclear tests have kept the country starved for technology and her scientists always found a way out. The challenge is more in the translation of said high technology into products that are relevant to local and ubiquitous use. While some have seen its way down, the large quantum of invention has never been translated into innovations. Part of the challenge is the tyranny of numbers.

India has 400 million people below the poverty line and another 600 million in the lower middle class and aspirant poor. Such a large number spread across different states each with a different language, tradition, and practice does seem daunting. How can we address the aspirations of a billion people with varying set of capabilities and abilities? The standard refrain from successive regimes is to deliver a one-size-fits-all solution. Thus, we try to teach a child from a remote area complex biology, chemistry, physics, and mathematics and try to equate that child with one in an urban set up. This is not to say that the child in the remote area must not be cared for. We must find innovate ways to find, nurture, and develop the Abdul Kalams of the future from such remote areas. However, we must be practical about how we do it.

People have repeatedly responded to every survey that the most important factor for them is a chance to make a decent livelihood. They have said that they are willing to spend as much money as possible to educate their children and to achieve a healthy life. More than handouts from the government, most individuals just need an opportunity to work and prosper. While we must ensure that people get enough opportunities to participate in the economic growth, we must remember that entitlements will only keep them remain where they are.

Starting with Amul in Gujarat and replicated by Aavin in Tamil Nadu, a simple cooperative marketing agency brought thousands of farmers into mainstream economy through the sale of milk. The Y2K scare created a multi-billion dollar software industry benefiting hundreds of thousands of engineers directly and millions indirectly. Selling spectrum created millions of jobs while bringing in billions of revenue. Therefore, when the government creates an opportunity, millions find a way to prosper. Creating a federal enablement was what Indian Kingdoms did successfully for millenniums to create jobs and bring revenue.

In contemporary India, the fundamental reason for our predicament is that 70% of the population lives in rural areas while 60% of the resources (especially human resources) they need are in urban areas. Thus, unless motivated by an internal calling, teachers, trainers, and doctors prefer to live in urban areas because there is no infrastructure for education, skills development, and healthcare.

Government statistics say that we have 1 teacher for 40 children; many experts that this ratio is much higher especially in rural areas. Over 33% of our schools are 1-teacher institutions; the motivated individual teaches across subjects and grades. Just 15% of our population have college degrees and over 75% of them unemployable; not because they are stupid but because our educational system does not impart the right set of skills. For the foreseeable future, India will have the most youth in the world and we do not have the system in place to help them succeed in the competitive globalised world. The Planning Commission says that by 2030, if we do not change our system, we will have 500 million unemployed youth. This makes the perfect recipe for an economic, social, and political disaster.

Given these statistics, there is no way that India can find stability leave alone fulfilling its dream of becoming a superpower by 2050. We have to embrace technology to not catch up with the developed world and China but also leapfrog into the future. In 2000, we had one of the lowest tele-densities in the world; today we turn on 13-16 million telephone connections per month. In 2000, we had limited options for automobiles; today we are one of the largest exporters of automotive accessories. India has always moved fast when it recognises a problem. It is time we address our skills development and education issues.

A practical approach for us to follow would be to leverage the huge data network infrastructure we have already deployed. India has over 1.5 million router kilometers of fibre connecting almost all telecommunication offices. We are on the verge of spending over $4 billion from the Universal Service Obligation fund to provide high-speed connectivity to every gram panchayat through the National Fibre Optics Network programme. What better way to use such large investments than to provide livelihood, education, and healthcare to disaffected citizens in rural areas?

Leveraging networking, video, cloud and computing technologies, we can deliver teachers, master trainers, and doctors to rural populations and bring hope to the 1 billion people left out of mainstream economy. As ISRO has shown, it is possible for us to achieve the impossible dream and lead the world.

Technology can bridge the rural-urban gap. Technology is the only hope to develop India.

The writer is president, Inclusive Growth, Cisco Systems. He is one of the largest inventors in Cisco with 57 patents

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