

IDEAS THAT IMPACT

Where technology and social innovation bridge the gap



NASSCOM[®]
FOUNDATION

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A NASSCOM Foundation Initiative

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FOREWORD



Dr. Ganesh Natarajan

Chairman,
NASSCOM Foundation

*Whatever you can do, or dream you can, begin it.
Boldness has genius, power and magic in it.*
- Goethe

Technology is the most reliable means to create, bold, social impact. As Goethe once said, the ability to make any dream into a reality is to take the first step. We have seen innovators through the years, taking that first step to create some of the most revolutionary technology solutions across areas.

Technology has the power to disrupt status quo, alter the way people live and work, rearrange value pools, and lead to entirely new products and services to transform the future of a country. In India today, technology has created waves across sectors. Through technology, there are skilled teachers available in remote areas addressing issues around geographical diversity, proximity, and access. There are accessibility tools, created for persons with disabilities, remote diagnostic apps, portable X-ray machines to name a few – all innovations showcasing breakthroughs in areas that were untapped until a few years ago.

On a national level, the government has leveraged the use of ICT to bring about more efficiency and awareness of government run services. The government is focusing on the Digital India initiative to empower the citizens through collaboration with different departments and the creation of several new ones. E-Governance is slowly transforming the way the government works & revolutionising public service delivery.

Through the NASSCOM Social Innovation Forum, we are constantly witnessing many rapidly evolving, potentially transformative technologies on the horizon—spanning information technologies, biological sciences, education, healthcare, energy, and other fields. While new technologies continue

to surprise us with their vision and possibility, there is a great deal of excitement in the untapped potential of existing technologies to support, and in fact, direct social change. Through NSIF, NASSCOM Foundation has worked to encourage a wave of unprecedented innovation & entrepreneurship that is bringing about change in the lives of the people in the country.

As the NASSCOM Social Innovation forum enters its 10th year this year, our goal is to harness even more efforts into become a catalyst for technology for good and add momentum to the change-inspiring work of innovators around the country who are using technology to benefit humanity.

This publication highlights the efforts and aims to build awareness to the organisations working consistently to bring about social change. The case studies documented here are only a glimpse into the tenacious efforts put in by our innovators to challenge the country's various needs. It showcases stories of hope, impact and the work that is being done continuously to build on the current technology.

We hope you read, enjoy and are inspired through our efforts to celebrate this movement of changing the face of India.





Driving the Tech for Good agenda

Note from the CEO



Shrikant Sinha
CEO,
NASSCOM Foundation

India has emerged as a start-up hub with innovations spanning across sectors. Technology has been the biggest enabler in driving change in both public and private sectors. India is considered an ideal space for social impact investing due to the enormous size of its demography and the unfulfilled demands for social and economic services. With over 50 active impact investors and a cumulative investment of \$4.1 billion since 2010 in more than 350 enterprises, India has emerged as one of the largest impact investment destinations in the world. Social impact investing in India has the potential to grow from \$1 billion in 2015 to \$ 6-8 billion by 2025 and has been growing with a rate of almost 15% annually. These investments have been concentrated largely on areas such as Agriculture, Financial Inclusion, Education and Healthcare.¹

With solutions integrating cloud computing, mobility and data analytics, the magnitude of social impact continues to grow. Not only are there innovators that are working to solve international developmental issues but a new class of innovators that are committed to seeking solutions to address local challenges through technology. With the government's initiatives through Digital India to push for creative use of technology and the social investments continuing to grow, we at NASSCOM Foundation are elated to contribute to the vision of an inclusive society through the NASSCOM Social Innovation Forum.

In order to aid this growth & raise investors' confidence in their investments, it is critical to continue to build capacities of the organisations working to creating social impact through various technological solutions. While tech aided impact continues to grow, it is important to reassess and question our focus areas to further accelerate this movement.

One of the key areas is the use of data to address a gamut of challenges. From an organisation's ability to collect data and analyse the effectiveness of their work and technological solution, to data sharing with other innovators working in the same space and creating open-source data platforms, data will be the driver to provide targeted solutions towards grassroots development. A lot of the innovators in the NSIF network are creating tech solutions using data analytics to catalyse change.

Over the last 10 years, NASSCOM Foundation has established itself as a thought leader in the 'Tech for Good' space by consistently looking inwards to question how numerous challenges can be addressed through the use of sustainable technology. The NASSCOM Social Innovation Forum is India's largest technology for good platform that aims at recognizing and supporting the best in class techno- social innovations that solve the country's most pressing social problems keeping in mind affordability & accessibility. The forum has been providing critical, catalytic grants and targeted mentoring to the strongest innovators with disruptive solutions to fill the gaps in the area of Education, Healthcare, Disability, Environment, Agriculture and Livelihood and more. With engagement from over 2000 diverse innovators, across 25 states in the country, the platform has collectively built one of the strongest ecosystems to encourage tech aided development in the country.

Our innovators this year have crossed boundaries with their expertise and areas of frugal innovation. Through the NASSCOM Social Innovation Forum, we will continue to encourage technological advancement to drive digital empowerment across the country, and drive the next wave of innovation, productivity and growth.

A handwritten signature in black ink, appearing to read 'Shrikant Sinha', with a horizontal line underneath.

¹McKinsey Research Report, November, 2016.



Executive Summary

Given the diverse social, economic and political demographic of India, the country is host to a plethora of social problems. Its burgeoning population makes the provisioning of basic needs such as food, shelter and healthcare a challenge, with many falling victim to abject poverty. To further exacerbate the problem, there has been mounting pressure both internally and from the international community calling for change. Hence it has never been more critical to find sustainable and scalable solutions capable of bridging these gaps and driving holistic development.

At the same time however, we are also witnessing a social renaissance of sorts. No longer are the citizens of India looking towards the Government as the primary vehicle of development, but are rather looking at themselves as the fundamental units of change. Through both For-profit and Not-for-profit models, individuals are leveraging the multiplying power of technology to create innovative solutions to some of the most pressing social problems.

It is this new wave of technology led development that the NASSCOM Social Innovation Forum (NSIF) hopes to embody. The NASSCOM Social Innovation Forum is a technology for good platform that aims at recognizing and supporting the best in class techno- social innovations that solve the country's most pressing social problems. The forum provides catalytic grants and targeted mentoring for the strongest upcoming innovators with disruptive solutions to fill the gaps in the areas of Education, Healthcare, Disability, Environment, Agriculture and Livelihood and more.

This publication is the third edition from the Ideas that Impact series, showcasing stories of the best innovations we received, as part of this year's edition of NSIF. The book will not only take a closer look at these stellar projects but explore the genesis of these innovations and what makes them tick.

The publication will also delve into the larger field of social innovation and act as a commentary on the larger technology for good space.

Primary and Secondary Education - Education is the foundation for every successful

developing community. The Government of India's Digital India mission hopes ensure inclusive and equitable quality education and promote lifelong learning opportunities. With organisations using cloud computing to provide the capability of establishing online classrooms and labs to deliver a rich set of learning tools that can be accessed at any location, to mobile apps providing a wealth of resources to teachers, parents & the students, we are increasingly seeing the use of ICTs to bring about a change in the education sector in India. The Indian government aims to increase digital literacy of the country to 50% from current 15% by bringing out favourable policies to give impetus to technology based learning.

Livelihood and Agriculture - The concept of livelihood is a complex one. In its most rudimentary form, livelihood is the means through which individuals are able to make a living. ICTs have built a bridge through which communities across the country can gain access to services, assets and access information that can build their capacities to garner gainful employment or self-employment. Technology is being leveraged here to end poverty, and promote inclusive and sustainable economic growth for all. There are solutions in this sector that facilitate electronic commerce and connect people and businesses to information and services relevant to new and existing livelihoods. Innovators have created digital services like mobile money, micro-insurance, savings and loans, job placement and market information that foster financial inclusion. Organisations are continuing to create scalable solutions that have the potential to transform how livelihoods are approached and empowered in India.

Accessibility - India is home to over 60 million persons with disability. There has been a growing urgency among organisations to create opportunities for Persons with Disabilities to ensure an independent life for them. ICT is now being widely adopted to provide affordable, scalable solutions in the area of assistive technologies. The government has also conceptualised the Accessible India Campaign - a nation-wide flagship campaign that will enable persons with disabilities to gain access for equal opportunity and live independently and participate fully in

all aspects of life in an inclusive society. In lieu of this, there are several partnerships being formed to create accessible buildings, accessible transport and accessible websites etc.

Primary Healthcare – India’s healthcare information technology market is expected to hit \$1.45 billion in 2018, more than three times the \$381.3 million reached in 2012. The increased adoption of telemedicine, HIS, electronic health records, mHealth, and web-based services has made digital patient data expand, demanding the deployment of robust IT infrastructure in Indian healthcare organisations. However there are also challenges such as primary healthcare infrastructure, low patient to doctor ratio, and archaic practices of information management that are gradually being addressed through various tech solutions. Over the years, the inordinate potential of ICT has been leveraged in digitizing the delivery of healthcare to the masses.

Environment - With the growing threat of climate change and global warming climbing to the top of the global and national agenda it has never been more imperative to adopt clean and eco-friendly practices. The capabilities for technology to drive clean behaviour are increasingly being noted. From the ability to leverage ICT to monitor pollution, promote conservation and drive energy efficient practices, technology is changing the way society relates to the environment around.

Other Social Issues –As with every developing economy, India struggles with numerous social issues such as child labour, environmental degradation, financial inclusion, governance, farmer services etc. ICT provides a unique approach to problem solving, and has shown over the past few decades that if used innovatively it can address these diverse challenges.

ICT has the potential to move the needle and create change in each of these focus areas – and every year as part of the NSIF process we rigorously search and select the best innovations across India. Featured in the publication are select, stellar solutions in each of the thematic areas. In depth interviews with the project representatives, heads of organizations and innovators, were carried out in an effort to give the reader not only a clear understanding of each project but a commentary on the types of solutions within each thematic area. Impact has been

showcased through testimonials from partners and beneficiaries.

The impact of these innovations along with the stories of the innovators behind them, are communicated in 13 in depth case studies. Each story analyses their genesis, what makes them winners, and their potential to create lasting change.

The book also contains snapshots of other select high potential social innovations we received, as part of the NSIF process this year, quotes by eminent jury members and thoughts from our supporters- Mphasis and Accenture Labs on the role of technology in social innovation.

The publication not only aims to demonstrate how technology can be used to achieve development goals but works to act as a beacon of inspiration for the youth of this country who are thinking of joining the social innovation movement and becoming the change makers that India needs today. ICT solutions have tremendous potential to change the way the world works, lives and interacts and thereby accelerate the achievement of the sustainable development goals(SDG) as well. To realize that potential, leaders within governments, businesses and civil society organizations must be bold and look for every opportunity to foster local innovation, and citizen access to ICT solutions and the benefits they provide. Through the NASSCOM Social Innovation Forum, we hope to do so.

Introduction

2016 has been a year on the rise - an year, that has been augmented by stellar initiatives by the Indian government, responsible corporates, and inspiring individuals. Almost all sectors in the country are making their mark with unprecedented policy reforms and private participation. The Digital India campaign by the government gives us an inspiring goal to work towards in which each person will have access to opportunities across sectors- governance, healthcare, education etc.

Information and communications technology (ICT) have been at the forefront of development. It has changed the lives of one and all by becoming the soul of everyday activities. From students to experienced technocrats, homemakers to agriculturists, everyone has recognised its infinite potential.

A robust picture of socio-economic growth emerges only when this pillar of progress is taken into rural heartlands, beyond the boundaries of established cityscapes. A countrywide roadmap committed to digital literacy for the underserved has already been charted.

The NASSCOM Social Innovation Forum (NSIF) is a platform, invested in providing encouragement and growth to innovators that are addressing critical issues in our country's development. The forum embodies NASSCOM Foundation's long term vision to use technology in bringing about sustainable impact.

Ideas that Impact, 2016-17

This report is a showcase of brilliant ideas that were nurtured and developed into innovative solutions by pioneers to fight adversities faced by the common man. The focus this year is on Primary Healthcare, Accessibility, Primary & Secondary Education, Livelihood & Agriculture & Other Social Issues.

India is host to a plethora of issues that continue to rise each day. However, with the innovators working consistently to create solutions to combat each of them, there is unlimited hope for inclusive growth. Some of the key afflictions and their solutions you will find chronicled in this publication are: mobility aids for persons with visual impairment, aids for the hearing impaired community, availability of timely guidance for agriculturists, flood and famine alerts, power supply in the villages, cognitive skill development aids for children to replace out-dated pedagogies, Tuberculosis diagnostics, and other issues.

This publication presents their journey and the impact they have made. These select case studies portray the underlying ecosystem around the challenges they aim to address with the use of ICT.

Primary Healthcare

India bears a huge burden of communicable and lifestyle diseases. The label of being the world capital of tuberculosis stings sharper with the rise of Multi Drug Resistant (MDR) TB. The NSIF category of Primary Healthcare shows promise as it tackles this issue effectively. This year's various solutions in this area have tackled some pressing issues.

Tuberculosis, daunted with social stigma, is a treatable disease. The revised national Tuberculosis control program by the government of India is working towards a TB free India. Their nationwide screenings are extensive and exhaustive. A novel app created by an entrepreneur is on the verge of a patent to help them in their TB screenings. This new smartphone application involves spectral analysis (.WAV/MP3) of a person's recorded cough that is processed through a set of algorithms to confirm if it is a TB related cough or not. Efforts are also ongoing to expand the algorithms to detect other lung-based ailments.

The divide between the public and private healthcare systems gets wider with every passing year. The medical records in the form of never-ending paperwork have left patients frustrated and worried. Advent of secure cloud platforms built on restful API that allow users to store important health records on their smartphones, have made filing health reports very easy. This will come in handy for those who wish to monitor their vitals at regular intervals.

There have also been innovations to provide care for the elderly. Geo-fencing enabled Android-based standalone wearable safety devices that provide real-time access to help in case of an emergency, has been extremely beneficial to them. Healthcare has been one of the major beneficiaries in the technology revolution.

Livelihood & Agriculture

India's pledge to supply power to all by 2022 is poised to be a promise well fulfilled with the lowest-ever proposed energy deficit of 2.1 per cent. The National LED programme and exemption of hydro projects from competitive bidding until August 2022 are some of the luminous initiatives taken by the government. The Livelihood & Agriculture section of the report covers the other need of the hour in this regard- sustainable, clean, green, and affordable fuel for all. The unreliable power supply in the remote corners of villages and off-the-map locations has become a serious concern. SOFC - Solar PV portable co-generated power systems are here to stay and aid the rural requirements. This Smart Energy Management System will help farmers with their power requirements on a plug and play basis - a solution developed by one of the innovators this year.

The Agriculture sector is ridden with an information gap among agriculturists and fronted agricultural experts who can handhold the farmers. Leveraging the status of being a country with the second largest smartphone market in the world with over 275 million users, the mobile phone is an apt medium to reach beyond

socio-geographical boundaries. Crop specific mobile apps developed by NSIF innovators in regional languages tend to bridge this divide. These cloud based ICT solutions built on Intel architecture devices provide analytics and information even in the absence of internet. Ancillary data to make crop import-export decisions and policy-making insights are also provided along with extension activity support. A chat based 24x7 communication platform between farmers and experts can answer even the most complex questions pertaining to cultivation and its management. Cloud computing, advanced image processing, AI, GIS, and remote sensing support this simple user interface.

Primary and Secondary Education

Primary and Secondary Education has seen a major upswing with policy interventions and reprioritisation of subsidies to mend social evils like gender bias, child labour, denial of higher education on the basis of caste etc. Education is fundamental to an equitable society. In India, more than 50% of students in Grade 5 cannot read a Grade 2 text or solve a simple subtraction problem. There is a general disengagement from studies and the greatest impediment to digital literacy is the fact that there are simply not enough devices per child. Infrastructure tolls like erratic electric supply, distance from the school, safety issues, etc. are additional deterrents. Literacy is not the end of the road. To make people employable, they need to be equipped with accurate skills as well.

This year's innovators have come together to tackle some of these issues. Audio-visual content and customised games on Android platforms have been developed, to be used as educational tools. Enabling comprehension skills with an uninterrupted access to Tabs, mobile learning applications for K-5 students for basic literacy and numeracy skills, introducing gamified cognitive skill development and assessment platforms with a customisable skill engine, and providing a large database of 2900 of multi-lingual leisure reading stories are few solutions that has been

developed this year. Impact indicators involve tracking real-time game play data and post assessment analytics. There are also concepts like 'Dial-to-Learn, a missed-call initiative for IVR learning' to further develop educational skills.

Accessibility

The NSIF innovations this year on Accessibility are in line with the vision of the Government's Accessible India Campaign- A project that wishes to integrate the 60 million Indians who suffer from some form of disability. The Rights of Persons with Disabilities Act 2016 was passed in December 2016 with inclusion of Speech and Language Disability and Specific Learning Disability for the first time. This also covers acid attack victims. National and State Funds have been earmarked to provide financial support

and reservation in higher education, government jobs, allocation of land, poverty alleviation schemes, and more. There are other subtle issues that afflict persons with disabilities which have been addressed by NSIF innovators. Visually impaired persons spend almost 80% of their time indoors and they need a simple and inexpensive solution to detect obstacles around the premises. One of our innovator this year has created a pocket-sized Haptic Torch with infrared sensors that runs on a single rechargeable cell! Similarly in the hearing impaired community, individuals are largely dependent on others for visual cues. This affects their independence and self-esteem. To address this, an effortless multi-alert wearable band that captures sounds and notifies the wearer with a vibration pattern and colour code, has been developed. These are just a few of the brilliant innovations showcased in this section.

A snapshot of the innovations by theme:

Primary Healthcare

Type of Solution

- Standalone safety device
- SOS connect between users and first-responders
- Geo-fencing, fall-alert, GPS enabled trackers for the elderly
- Live-stream wearable for paramedics and hospitals
- Android based TB detection App with spectral analysis of cough sound
- IoT Health Management and digital medical folder for all health documents
- Smart Body Analyser, BP Monitor, Glucometer, and health alerts on smartphone

Primary and Secondary Education

Type of Solution

- Mobile learning apps for K-5 children to gain English language and numeracy skills
- 'Learning through Play' concept with uninterrupted 45-min Tablet time per child
- Interactive games and comics on a customised Android app
- Dial-to-learn missed call service. Children listen to stories and songs uploaded on IVR
- Gamified cognitive skill development and assessment platform for learning 5 core skills - Problem solving, Memory, Focus and attention, Visual processing, and Linguistics
- 2900 multilingual stories in 62 languages as leisure read for children

Livelihood and Agriculture

Type of Solution

- Chat based communications platform between farmers and agriculture experts
- 24x7 helpline for queries on pest and nutrition management for crops
- Multilingual Android App for weather, market prices, cultivation methods, crop care alerts
- Remote sensing, acreage and yield prediction with the help of Google maps and growth index analysis
- Connect with farm extension services
- ICT based crop specific audio-visuals and irrigation reminders
- Vaccination reminders for goats, sheep, and cows
- Pricing and break-even analytics
- Clean, sustainable, affordable power from SOFC-Solar PV portable co-generated system

Accessibility

Type of Solution

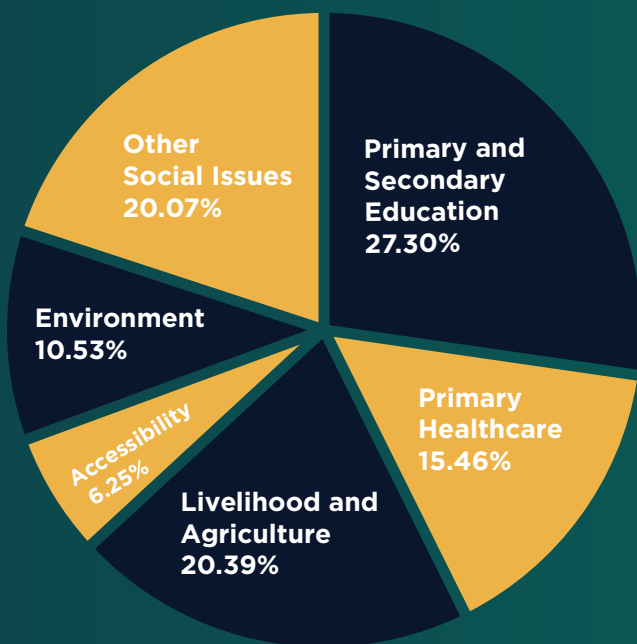
- Working prototype of a Haptic Torch (indoors obstacle detector) for the visually impaired
- An affordable wearable for alerts about everyday indoor sounds for the hearing impaired

NSIF bridges the gap

An overview of themes and innovations points towards a steadfast growth in collective conscience of people and its articulation in terms of using technology for positive outcomes. NSIF encourages exploration and engagement of fruitful partnerships between stakeholders. NSIF looks forward to mitigating the challenges faced by the innovators by:

- Giving them more visibility
- Giving them access to relevant stakeholders like Corporate CSR activities, impact investments, government machinery etc.
- Bridging the wide gap in the business model and innovations by providing access to experts in the industry
- Providing technical support to select Not for Profits for building the solution further to amplify impact
- Providing the largest, national level platform to collaborate and grow

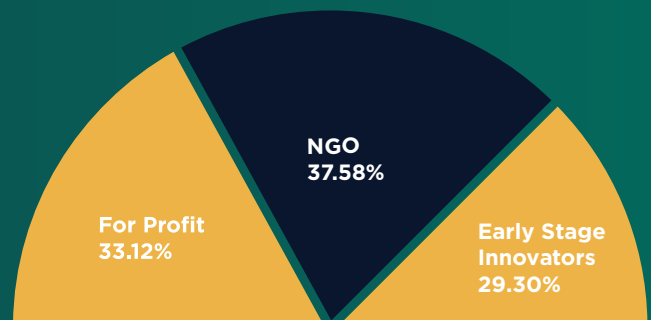
Percentage distribution of Innovations in NSIF 2017 by Category/Theme



A look at the distribution of innovations in NSIF 2017 shows a clear trend that is emerging.

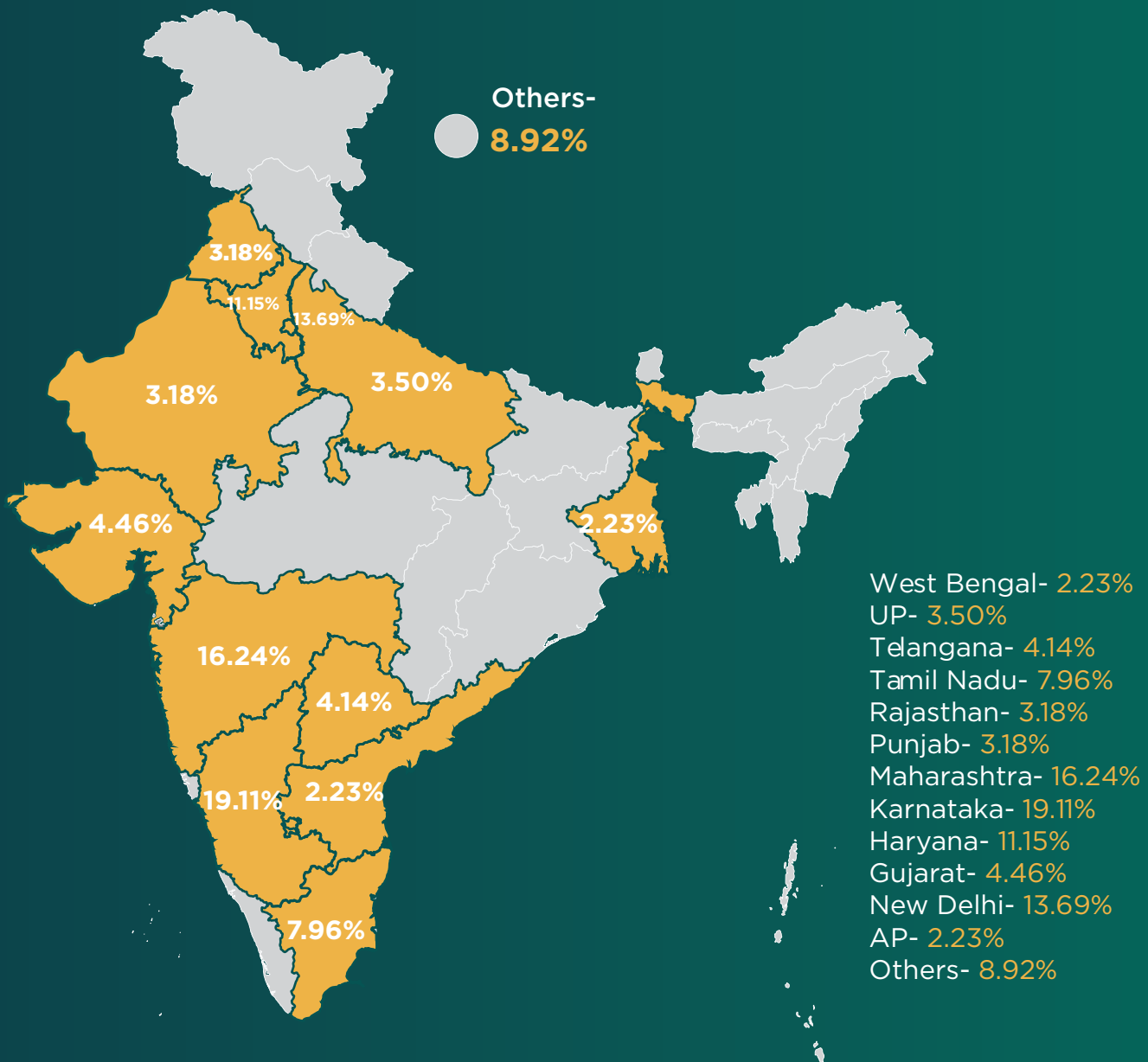
Education sector has seen a tremendous high in terms of inputs and engagement. Other social issues such as solutions for women empowerment, domestic violence, use of telecom in textile industries, microfinance, mining industry etc. have also grown in the last year. The innovations this year also prove a rising interest to create solutions beyond the ordinary and taking a step further to charter unknown territories to transform India.

Percentage distribution of Innovations in NSIF 2017 by Stakeholders – NGO, Social Enterprise, Students and Individuals



Almost 40% of the solutions were from Not for Profit organisations with collaborative efforts from subject matter experts and technology experts. An almost 30% of innovations arising from early stage innovators showcases the growing number of individuals actively involved in making a difference to people's lives. Many of these innovators have gone ahead to register themselves as organisations to further scale their work.

Geographical dispersion of 2017 innovations in percentage - States and UTs



Mapping the origin of these innovators, we are able to understand that the ecosystem is spread widely across the country. While Maharashtra and Karnataka continue to lead, there are exceptional nominations even from non-metropolitan cities.

Technology distribution of Innovations in percentage :

Cloud: 8%

Hardware and Software: 31%

Mobile: 20%

Hardware: 14%

Big Data: 1%

Portal/Platform: 11%

Software: 8%

Web Based: 14%

Others: 10%

This 3rd edition of the Ideas that Impact series, presents innovations across ICT including, data led innovations and other technologies.

There is a shift towards Internet of Things (IoT) and cloud based applications. The future seems to be looking bright for the new entrants – artificial intelligence and virtual reality.

This report succinctly sums up the driving force that technology is the power to create everlasting social impact. The selected case studies have been cautiously researched with the support of in-depth interviews with project leads, domain experts and beneficiaries. Each case study presents a challenge tackled in a specific sector by providing an effective ICT based solution.

This book also includes creative solutions across thematic areas. Insights from leaders in the sector and stories from beneficiaries further add to the value created by these innovators.

Ideas that Impact is a platform that showcases the crucial work being done across the country by organisations of all sizes, to address various issues and provide hope to all communities. With collective action, the power of technology and the innovative ideas across the country, we hope to inspire more change makers to join this movement.



Believing in impact through innovation



Puneet Bhirani

Chief People and
Administrative Officer,
Mphasis

Technology and innovation are the cornerstones of India's growth story. As technology shapes borders to build a more inclusive society, it brings with it the power to create long term social change.

At Mphasis, we firmly believe in the power of technology to create effective solutions in the social sector and have been supporting a number of tech for good programmes as part of our larger CSR efforts in addition to the NSIF portfolio. Our experience, so far, has been significantly inspiring, with most projects starting to deliver impressive results. As part of NSIF, we focus on Primary and Secondary education as we believe that improvement in learning outcomes early in life can result in a number of positive spill over effects all the way into the future.

Over the year's we have identified a number of strong, innovative Tech for Good project to support as a part of our varied CSR endeavours. We always urge the companies to keep a keen eye on the social impact potential and cost-effectiveness in employing technology. For early stage innovators, we advise that it is important to pick up relevant problems with high impact potential first and then look for innovative approaches to solve them rather than the other way around. In addition, it is advisable to look for financially and operationally sustainable models wherever feasible.

NSIF has been an outstanding platform for those who embrace innovation in totality and utilise it to bring about a social reform at all levels of the economic pyramid. It is a necessity in refining models, mobilising resources & supporting in long term intended impact.

The innovators identified through NSIF have consistently stood out for their futuristic vision, dedication towards social empowerment as well as sustainable approach to creating impact. In time, we hope NASSCOM Foundation will extend the incubation support to include more ventures and building the capacities and capabilities of innovators for a longer duration than the current period of 12 months. Through our efforts, we hope to be a part of India's growth through technology to bring about change at every level, for every person.



‘People First’- Amplifying social innovation with Technology



Sanjay Podder

MD and R&D Head,
Accenture Labs India

Accenture believes that the future of Technology is about ‘Amplifying’ and empowering ‘People’. Our Technology Vision in 2017 highlights ‘People First’ as the overarching theme. We believe that technology is adapting to people’s wants and needs. Technology by people, for people is empowering us to do more than we ever imagined.

This is even more pronounced in accelerating social change which is being amplified by technology and driven by social innovators, changemakers, startups from all over the world.

Accenture Labs’ ‘Technology for Good’ research has brought us close to several changemakers in India and abroad. Exponential technologies like Artificial Intelligence, Blockchain, IoT, Augmented and Virtual Reality and other digital technologies are enabling social Innovators to achieve new possibilities and amplify their performance towards attainment of sustainable development goals.

Take the example of Akshaya Patra, addressing the hunger and education challenges for children. Akshaya Patra Foundation is the world’s largest NGO-run Mid-Day Meal Programme serving wholesome food to over 1.6 million children from 13,529 schools across 11 states in India. Akshaya Patra, teamed with Accenture Labs to launch an inventive project that applies disruptive technologies to exponentially increase the number of meals served to children in schools in India that are run and aided by the government. The “Million Meals” project revolutionizes Akshaya Patra’s supply chain and operations, resulting

in improved food quality and expanded service reach. Rooted in a vision to eliminate classroom hunger, the “Million Meals” project demonstrates how disruptive technologies such as artificial intelligence (AI), the Internet of Things (IoT) and blockchain can help address significant challenges in mass meal production and delivery. Overall analysis of the project indicated a potential to improve efficiency by 20 percent, which could boost the number of meals served by millions.

The CEO of Akshaya Patra provided testimony to the fact that it was indeed heartening for him to see big players in technology like Accenture coming forward to lend their expertise and to help address societal challenges like hunger through the innovative use of technology. He believed this initiative will not only enhance efficiency while giving a boost to their operations, but will ensure that quality standards are met while increasing the number of meals served. He shared his vision to expand their reach to millions of more children with the help of such technologies and looked forward to more collaborations with Accenture.

This year, Accenture Labs is delighted to partner with NASSCOM Foundation as a Technology Advisor to NASSCOM Social Innovation Forum (NSIF) which is one of the largest ‘Technology for Good’ platforms in the country. It has been a great opportunity interacting with over 1300 social innovators in India. Three of the social innovators are receiving technology advisory from Accenture Labs and we are delighted with the opportunity to co-innovate for a larger social impact, amplified by technology.

As an impetus for our People First theme, these social innovators are stretching their boundaries, using technology to shape customer experiences and deliver outcomes to tackle the most pervasive social concerns.

- Grameen Foundation in India is accelerating the financial inclusion agenda by empowering citizens in rural areas with microfinance. Technology platforms such as Aadhaar and UPI can play a critical role in defining new modes for microfinancing.
- Shelter Associates is one of the most innovative organization helping accelerate the agenda of 'Swachh Bharat' and make Pune the first Open Defecation Free (ODF+) city in India.
- 'BleeTech' is a unique startup empowering the hearing impaired to lead an enriching life. Accenture Labs' deep expertise in using AI for Accessibility solutions will further strengthen Bleetech in their journey for change.

In collaboration with NSIF, we look forward to many such opportunities to amplify the impact of 'technology for good'.

Accessibility



When sounds come alive for all



BleeTech Innovations Pvt Ltd
Blee: Wearable for hearing impaired

One may wonder what a Kathak dancer and a classically trained singer have in common other than their love for music? Janhavi Joshi and Nupura Kirloskar, while studying Industrial Design in MIT Pune, combined their passion to create a new partnership.

Though they had undertaken a number of different coursework projects as part of their course such as user experience and design for an electronic table app or concept for green bamboo bottles it was a common course they took on 'Designing for the Special Needs' that sparked their interest.

The course profoundly impacted both women personally and presented them an opportunity to approach the topic of 'design' through the medium of performing arts. This study, took them to various culture shows and dance performances by disabled youth. The team was particularly inspired by one such performance by a dance troop of hearing impaired youth.

Through their work they came to realise that dance, like many other artistic creations, was just another form of sign language. The fact that the dance troop didn't need to listen to music, but rather depended on sign language and coordination, to help them create their choreographies, was mind opening.

This finding however, proved to be bitter sweet, because it brought the team face-to-face with the reality of those living with hearing impairment. It became apparent that living a life of independence where the hearing impaired did not have to depend

on teachers, parents or partners to guide them through their daily routine, remained a distant dream. Their inability to hear alarms, important alerts such as a dog barking or baby crying resulted in them risking their safety and low levels of self-esteem.

Additionally, medical treatments such as hearing aids, cochlear implants were not readily accepted due to high costs and the inconvenience caused by extreme customization. A simple and affordable



"Making technology affordable for a niche user group is very challenging for us as majority of the deaf community in India is not economically well off. It is tough to convince our users to pay, hence it is fun to explore creative ways to model our business strategy".

**Janhavi Joshi, Co-founder
BleeTech Innovations**

solution was required that would ensure at least the basic safety of hearing impaired people as well as open new doors of possibilities.

It was at this point that both Janhavi and Nupura decided to move past academia and create an affordable solution that would enable the independence of those living with hearing impairment. This in turn led to the genesis of their social enterprise, BleeTech Innovations Pvt Ltd in 2015.

Blee: Simple and affordable wearable tech for the hearing impaired

When the functioning of one sensory organ is compromised, the remaining senses of an individual tend to be heightened. Leveraging this fact, Blee proposed to build a multi-alert solution for those affected by hearing impairment. Taking into account their highly powerful sense of touch and vision, sound can be detected by them through unique combinations of vibration patterns and lights.

Blee is a wearable band that detects and captures those sounds which need to be heard by a person. Each sound is associated with a particular vibration pattern and colour code so that each alert can be distinguished with ease. When connected with Bluetooth, it can be used as an independent smartphone app (Android) as well. In this regard, the phone becomes the user's companion, picking up recorded sound alerts as and when they occur in the surrounding environment. The smartphone's vibrator, screen and flashlight are used to notify the user. The user friendly UI, wearable comfort and a price point of INR 3,000/- make Blee a perfect gadget to have.

Over time, a repository of various sound alerts will be added to make the technology more efficient. BleeTech has partnered with Einsteiner Technologies for development and support.

At the moment, Blee identifies two types of sounds:

Type 1 is recorded or a user defined sound. The user can record up to 10 sounds for now. They include sounds like door bell, your name being called out etc.

Type 2 is a library of default sounds. These include pre-saved sounds like fire alarms, ambulance sirens and sounds emanating from the mobile phone itself like phone rings, message tones, alarms etc.

False detection of sound and the high production cost of the wearable band are some of the challenges Blee is trying to overcome.

A winner's story

Prerana Sahane Dixit is a hearing impaired Bharatnatyam dancer. Her guru Shumita, contacted Blee after reading about them in the local newspaper, in an effort to help Prerna further her own career independently.



"Working with the deaf community in India is opening up many opportunities for us to experiment with. We are having fun. We are doing what we love. We don't know what is coming up tomorrow! This sense of surprise is what we love the most!"

**Nupura Kirloskar, Co-Founder
Bleetechn Innovations**

With the help of the Blee wearable, Shumita customised the rhythm pattern of one of the songs, Abhinaya Geet – a storytelling piece. This gave Prerana a reference, helping her re focus her efforts on her expressions - thus allowing her to perform the complete song independently without looking at anyone for cues. Now with the help of Blee, Prerana can dance wherever she wants, whenever she wants.

Long term goals

BleeTech plans to:

- Focus on delivering the best technology possible at the most affordable price to maximum people in India.
- Develop the listening mechanism on Blee for more accurate sound detection.
- Connect with schools, colleges, clubs, NGOs and government agencies for a wider reach.
- Incorporate directional indications and speech recognition in the device with the help of their technology partners.
- Conduct a small pilot of 30 users in March 2017.
- Launch Blee in the market by June 2017.
- Have more community awareness programs.

Beneficiaries speak

"I can't wait to drive my own bike. I am eagerly waiting for Blee. If I get to know about all the crazy honking that happens on the roads when I am driving, it will give me the sense of safety. I hope team Blee cracks the technology soon and I am free to ride wherever I want, wearing the stylish Blee watch".

**Neha Kulkarni, Born Deaf
National Award winning Animator**

"I've been working for accessible India for many years. We need to start from the base of the pyramid if we want to make the change happen. I love the concept of Blee watch. And I wish to see them continue their work in this field".

**Anita Iyer
Ekansh Trust, Pune**

MILESTONES

2015:
BleeTech Innovations registered as a Company

2016:
Prototype ready

2016:
Partnered with Einsteiner Technologies

2016:
Test trials at Red Cross Society School for the Deaf with students of performing arts

Community awareness workshops called 'A for All' to bridge the gap between the hearing and deaf communities

Successful product trials in Pune, Mumbai, Bengaluru and Patiala

Breaking down barriers & showing the way



Visionaid Charitable Services Society
Haptic Torch for the blind

Designing something innovative, useful and inexpensive is the primary objective for any product developer. MS Raju has been able to achieve this with the haptic torch innovation.

An IIT Kharagpur Electrical Engineering graduate, M.S. Raju, has had a celebrated career, spanning over 50 years in the development sector. It was at some point during his career that he resided for a short period of time in the NABK hostel for the blind in Bengaluru. During his time there, he noticed how challenging it was for his visually impaired friends to move around indoors as they did not use a cane or any other tool to help them with mobility. Instead they would walk around with their arms out stretched calling 'side, side' to others, in hopes that they would be given way. Moved by their plight M.S. Raju decided to take it upon himself to be the harbinger of change.

As a first step, Raju undertook intensive research into the field of assistive technology, through which he discovered that the solutions available in the market, provided very little or no relief to those in need. Ultrasonic Smart Canes or international haptic torches were extremely expensive and therefore largely unaffordable for the masses. There was an urgent need for simpler and cheaper alternatives.

After his retirement in 2004, M.S.Raju founded Vision Aid Charitable Services Society with the hope of helping people with vision related disabilities to lead independent lives, in under-served areas. He was joined by his son Ramakrishna

Raju who was based in the US, and Padmakar Vallury, a Mechanical Engineer from Hyderabad, to form a committed development team. They set out on a mission to making low-cost and easy to use devices. With the help of their biggest donor and partner - M/s Vision Aid Inc-a US based 501 Charity they created a camera mouse, a low cost electronic magnifier using CCTV system and the haptic torch for persons with vision impairment.



"This product will be the best social contribution and Accessibility-Service to vision disabled in India by NASSCOM Foundation and Vision Aid. It has very good export possibility as it is universally usable".

**M.S.Raju, President
Vision Aid Charitable
Services Society**

Meeting of minds

Inspired by his personal experience with his counterparts in Bangalore and his research into existing low cost assistive solutions -such as the Smart Cane created in IIT Delhi, Raju took it upon himself to create a device that assisted in the mobility of the visually impaired.

With the help from his Alma Mater from IIT Kharagpur and the professors and team leads from the LAB at MIT Boston he developed a low cost haptic torch. The torch uses an obstruction sensing narrow angle Infrared system to alert users of obstacles in close range. The HT is perfect indoor solution, as it is light weight, compact, pollution- free and available at a competitive price point when compared to its international alternative.

Haptic Torch - Seeing the unseen

The Haptic Torch is a pocket sized non-contact torch for detecting obstacles in the distance of 1200-1500mm. It uses compact infrared sensors with readily available homegrown components and technology. Diffused beams have been used to eliminate the need for reflectors. The power requirements are met by a

single torch-cell.

Important specifications of the device are:

Weight	120 gms
Length	< 150mm tip to tip (as an ordinary mobile phone)
Diameter	< 35mm (can be held by a child)
Body	Strong Shatter Proof Plastic
Power	Dry/Rechargeable Battery
Switching	On/Off Thumb Switch
Signalling	Audible buzzer + vibration Signalling for traffic 'Right of the way' Audible Buzzer

"The product is a boon for my mobility, especially when I move indoors, walk across corridors or take the stairs. I am not allowed to carry a long cane in certain places but this handy device goes anywhere with me".

Sivaprasad Modu
Telephone Operator with
Indian Navy (Age 30, Near Total Blind)
Vishakhapattanam

MILESTONES

2004-
Vision Aid
Charitable
Services
Society
registered

2011-12-
Selected
as a NSIF
Finalist

2012-13-
Study of global
solutions of a
handy device
for the blind

2016-
Identification of
key components
for Vision Aid
Haptic Torch

2016-
Finalisation of
the electrical and
mechanical design

October 2016-
Working prototype
presented to Director
NIVH Chennai

2017-
Body design is
being fine-tuned

2017 -
Tooling is
being prepared
based on the
mechanical
design

Checks and balances

As of now, only a few working prototypes have been made and given to the users. Their response to the product has been overwhelmingly positive. The utter simplicity and reliability of the product have been the biggest plus points for the users.

It has been fairly smooth sailing for Vision Aid from the developmental stage to getting the prototypes ready. Support from Angel Investors and rewarding collaborations with agencies that help the visually impaired community have been the driving force behind this project.

However, an important factor that may pose to be a hindrance at some point is the time taken for the visually impaired community to adapt to new devices that are out of their comfort zone. To combat this, the organisation will need to employ social media marketing, conventional media, exhibitions and demos as well as traditional marketing methods. Group persuasion and individual convincing might also be required to overcome hurdles as and when they appear.

Long term goals

Vision Aid plans to:

- Scout for cheaper sensors.
- Fine tune the electrical design and mechanicals.
- Make 100 pieces and market them at subsidized prices.
- Connect with organisations like Worth Trust Katpadi, Omato Hyderabad, Karishma Mumbai etc. to manufacture and sell the product.
- Involve NIVH and NIEVD to adopt it for national distribution.
- Reach at least 1 in 1000 out of the 1 crore Indians with vision impairment.

Beneficiaries speak

"I am a regular donor to Vision Aid. Here is an extremely useful and needed device. If it is manufactured and distributed, I will consider my donation as well used, in fuelling an excellent innovation like this".

Bhaskar Patnaik
(Visually impaired, Age approx. 60)
Faculty, Andhra Bank Staff College,
Visakhapatnam

Accessibility

Briefs of 2016-17 Innovators

1. AAMI

AAMI

Persons with visual impairment are as many as 294 million across the world with over 90% of them living in poor economic backgrounds. The biggest challenge that they face is the inability to read, leading to marginalisation at a number of levels. This also reduces their ability to access information, knowledge or livelihoods. As a result, they remain caught up in the vicious cycle of poverty and disability. In a situation where even educational materials are not available in accessible formats or Braille, there is little to be said about other published materials.

Under these circumstances, one can only hope for a low cost appliance that can help them access the printed letter with ease. This is exactly what AAMI has tried to achieve. The organisation has developed a low cost wearable device that enables a person with visual impairment to interact with the text in books or pamphlets etc. This device uses machine learning software to convert text to speech for users as they move their finger across each line. The device also provides haptic (use of sense of touch) feedback to ensure easy navigation from one line to another. This device is also useful for persons with slow learning abilities or for people struggling with dyslexia. Alternatively the device can also be used by people with low literacy rates to help them read. This device has the potential to reach more than 285 million in India alone and address the challenges faced by persons with visual or learning disabilities.

2. Billion Ables

DiscoverAxs

The 2011 census by WHO, states that India is home to over 21 million Persons with Disabilities (PwDs). However, this number is still viewed with some hesitation by experts in the field who claim that it is grossly underestimated. And though the government has undertaken ambitious steps to empower PwDs through the 'Accessible India Campaign' which aims to achieve universal accessibility for all PwD citizens, there is still a long way to go in making India inclusive for all. One such organisation making notable strides in this area is Billion Ables. This social enterprise has developed an android application, which crowd sources and aggregates information regarding places, products and services that PwDs can avail in their locality. The use of filters and categories such as - education, health, disability events, malls, disability friendly parking slots etc make this a one stop repository that is effective and easy to use. Furthermore, the app offers quick navigation with Google API, allowing users a virtual tour to the location and the ability to book and call. Users can leave their comments and reviews on this app too. Still in its early stages, the organisation envisions the app reaching over 200 million PwDs across India.

3. Project Mudra

Annie

There are approximately 15 million people with visual impairment in India. One of the

many challenges they face is the lack of access to basic services such as healthcare, shelter and education. Additionally, most of their education depends on the availability of Braille learning material, which is in very short supply and even when the material exists, very few are able to access it due to being illiterate in Braille. In fact, only 0.2% of India's visually impaired can actually read Braille. Annie is a flagship hardware cum software product that enables the visually impaired to learn how to read, write and type braille. The device also includes curated interactive content developed in house that eliminates the need for a one to one teaching learning method. Though the organisation has just begun it's operations, it hopes to market Annie internationally, impacting more than 24 million people.

4. Cross the Hurdles

Cross the Hurdles (Online Teaching Program for students with disabilities)

The Indian education system has long remained rigid and highly exclusive, restricting entry to children from marginalised sections of society, especially those with disabilities. Children with severe mental and physical disabilities many a time do not get to participate in mainstream education due to lack of infrastructure, teaching capabilities and social stigmatization that surround them. Therefore, they are unable to get the necessary life skills and knowledge required for independent living. Cross the Hurdles has been inspired by two Government programs - Each One Teach One and the Digital India Program. As part of the program, special educators provide online classes to disabled children through a virtual classroom on topics such as soft skills,sex education, career guidance and much more. The classes are tailored according to the specific requirement of the students. For example, children with hearing impairment are taught using sign language or children with autism are taught with the use of specially developed e-learning modules. At present the organisation charges a minimum fee

for the program. Until now the program has reached over 5000 children with disabilities and hopes to reach many more in the near future.

5. IDIA Charitable Trust

Project Code Share

There is a dearth of accessible educational material in all areas, with legal education being no exception. This has acted as a major barrier for aspiring youth with disabilities, wishing to pursue a legal career. IDIA Charitable Trust - a Not for Profit that works to empower under privileged students, and encourages them to pursue legal education, has launched one of their flagship programs, Project Code which is an online platform that acts as a digital repository of accessible legal material.

By making legal texts accessible, the organisation hopes to carve a pathway and provide the necessary tools and knowledge for disabled youth to follow a career in Law. Project Code Share can potentially benefit upto 70 million persons with disabilities in India. It will be of immediate benefit to persons with disabilities currently studying or working in the legal/policy/civil society ecosystem. Indirectly, it will also benefit other members of society, as meaningful inclusion of persons with disabilities in our judicial system will ensure a greater variety of solutions to problems faced by society.

6. Lotus College of Optometry

MagVue - A low cost video magnifier for visually impaired

Low vision is defined as visual impairment which cannot be further treated or managed with spectacles, medicines or surgical intervention. Recent WHO statistics estimate that 5% of India's population is partially sighted or suffers from low vision. The practice of combining those suffering with low vision with those who suffer from complete visual impairment by health workers, and the

society at large has led to the needs of this community being largely overlooked. The social exclusion leads to low self-esteem and lasting psycho social impact for individuals with low visions.

To further exacerbate the problem, the few solutions available in the market remain expensive or aren't portable. MagVue, is a hardware cum software mobile accessory developed by the organisation, that turns any smartphone into a powerful video magnifier. It primarily acts as an aid for low vision individuals, helping them read both educational and vocational material. The software component of the solution comprises of a mobile application, which is responsible for image processing, visual contrasts, and digital zoom to further magnify the content apart from the optical magnification provided by the clip on. The MagVue app is currently available on the Android operating system making it available pan India.

7. Score Foundation

Project Eyeway

The plight of the visually impaired in the present context is largely misunderstood. Social stigma surrounding the issue, has meant that there has been little effort made into comprehending and effectively addressing the needs of the community as a whole. Limited resources available have left those with visual impairment and their families without adequate knowledge on how to cater to the economic, psychological and emotional needs of those disabled persons. To this end, Score Foundation has launched Eyeway, a one stop shop for all relevant information and resources regarding visual impairments. As part of the project the organisation runs a national helpline along with six partner organisations where callers can dial in with any queries on visual disability. Callers are connected to trained counsellors who offer practical solutions and share their knowledge in the local language of the customer. Information dissemination also takes place through the organisations website, social media and whatsapp platform. Since its launch in 2015, the

helpline has answered approximately 5,500 calls from visually impaired individuals, families to therapists and more, estimating the number of indirectly impacted beneficiaries to be over 2 lakhs.

8. Shanta Memorial Rehabilitation Centre

Azadi ki Udaan

Research has shown that women with disabilities face multiple levels of discrimination and are more prone to disadvantages by virtue of both their gender and disability. This is more pronounced amongst marginalised and rural communities where women are frequent victims of violence, are denied access to basic amenities, information, the right to earn as well as the ability to participate politically within the community. When this is paired with disability, it leads to complete disenfranchisement and dehumanisation of these women. In an effort to empower this section of society, the organisation has developed Azadi ki Udaan, an android mobile application that aims at providing rural women with disabilities and social workers the information, tools and resources required to combat domestic violence. Information includes rules and regulations on the topic, government schemes women can avail of and best practices on dealing with instances as and when they occur. Beneficiaries can access the information through audio recordings, by calling in to the organisation via the app and speaking to a social worker, receiving text or voice messages for women with visual impairment.

Furthermore, to ensure that the app is highly accessible to the masses, the organisation has ensured that all its features are available in 4 regional languages, with the app working both online and offline mode. The project is currently being operated through 4 Gender Disability resource centres in Gujarat, Odisha, Karnataka and Telangana, however the call-in feature is operational pan India. Only in its first month of operation, the app has impacted 2000 women so far but

hopes to reach all 1.8 million women living with disabilities in the country.

9. Nayi Disha Resource Centre

Nayi Disha Resource Centre

Parents of children with intellectual and development disabilities lack the necessary support mechanisms to manage the requirements of their children. In fact, they are a largely overlooked stakeholder group in the discussion surrounding disability. From coping with the initial shock of the diagnosis to developing an understanding on how to provide the necessary care needed, parents are not given the tools, information and life-long support they require to build an enabling environment in which their child can thrive and grow. It is with this in mind that Nayi Disha has created an online portal that acts as a repository of all the information a parent of a child with intellectual disability could require. This includes a directory of verified service providers in the field of intellectual and developmental challenge, research and data on various disorders and therapies along with available support for parents and caregivers.

It also allows users to view details like clinic or school timings, facilities or therapies available in the school/clinic/hospital, fees, and qualifications of the service providers. Parents can rate and review to vet the professionals. What's more interesting is that the organisation enables parents to get support through online support groups and social media. The platform piloted in Hyderabad till now has the potential to reach over 30 million parents of persons with intellectual disabilities and countless more care givers/therapists.



Primary Healthcare



The Digital Medical Folder

KEEP TRACK OF YOUR
BODY WEIGHT



KEEP TRACK OF YOUR
BLOOD PRESSURE



Cooley Technologies
Cooley

Hospitals across the country have set procedures in which patients have to fill out multiple forms in order to get treated. This creates inefficiency, poor time management & most importantly, lack of quick response time in treating a medical condition.

Patients that are afflicted with long term illnesses often struggle the most due to multiple requirements of different diagnostic reports & case files to be produced for reasons such as reimbursement of bills, studying medical history etc.

In today's complex healthcare environment, patients often consult physicians or hospitals with no or limited knowledge of their medical illness, largely due to an unorganized mechanism for capturing and maintaining their health information. An overwhelming percentage of patients still tend to keep a pile of medical papers of their personal health information, which unfortunately they find hard to locate when they actually need them.

Manu Madhusudanan, CEO and Co-Founder of Cooley Technologies, Bengaluru felt that these iterative processes could be addressed through the use of technology. His passion for the digital ecosystem and his dynamic experience in architecting and developing Ad management systems for Yahoo & Microsoft helped him follow this idea through with prompt and decisive actions.

He explored synergies with healthcare entrepreneur Prabhakaran Tambaram Prakasam to ascertain that their target

audience was the same. There was no looking back once they realised that their goal was similar. They both wanted to empower chronically ill patients to manage their health records safely and securely from a single point.

Cooley Technologies was started in 2015. Cooley's IoT platform (Android and iOS mobile applications) and medical devices, enable patients to capture, manage, and maintain their health records while also staying connected with their physicians or primary health care centres.

GET ALGORITHMICALLY ANALYSED
HEALTH INSIGHTS



LOG YOUR
BLOOD PRESSURE



"Cooley puts your health in your hands and lets you manage it better."

Manu Madhusudanan,
CEO and Co-Founder,
Cooley Technologies

IoT Health Management Platform

Empowering patients to manage health information from a single spot

The platform allows the patient to record important health vitals, medicines, calorie intake, and store their lab reports and manage their medical profile. It also helps generate a health summary which patients will be able to share with their doctor for further advice.

In general, health IT includes the Hospital Information System (HIS) and other products/apps, but there is one missing aspect – engagement with the patient. Coeey bridges this gap in the entire process by being the 3rd platform for health management of chronic patients. 3rd Platform is about connecting patients to health management systems and providing targeted services to them. The IoT platform can help patients minimize their visits to hospitals, labs, or pharmacies and provides personalized insights on their medical condition while allowing them to stay connected with their doctors. This empowers patients to make informed decisions on their medical condition.

Ease of use and patient engagement features available on Coeey are:

- Alerts & notifications
- Chats with a medical expert
- Personalised coaching
- Video contents on specific topics
- Activity & diet monitoring

Coeey has so far introduced three devices that connect with their mobile app. The captured values get stored in the log book of the mobile app that can be shared with a medical provider/physician or used for future reference.

Smart Body Analyser : It measures six different body parameters, viz., body weight, body mass index, body fat, body water, bone density, and muscle mass. One can sync the data with the Android

application via Bluetooth. It supports Bluetooth 4.0.

Smart BP Monitor – It measures blood pressure and heart rate. One can sync the data with Android application via Bluetooth. It supports Bluetooth 4.0.

Smart Glucometer – It measures blood glucose. The data can be synced via 3.5 mm phone audio Jack.

Coeey does not have a technology partner; the innovation is completely self-developed technology. The end-to-end health-monitoring IoT platform (Android + iOS app + smart devices) allows users to collect, store, analyse their health vitals and share a medical summary with their doctor. The collected data further gets sliced, analysed, and presented to the user as actionable steps that ultimately result in improved care prevention, overall wellness, and cost effectiveness. Using these devices and the app, Coeey studies and offers personalised health solutions to the user, as per their goals such as diabetes control, weight loss, control sugar cravings, physical activity, etc.

Back-end Technology

The Coeey IoT platform has health scores, intelligent alerts and notifications engines that comply with self-developed algorithms. The health score is calculated based on several parameters such as user's physical activity, diet, sleep pattern, water intake, smoking habits, alcohol consumption, family history, and platform engagement.

The users can store their medical/lab reports by means of image capture or uploading a PDF to the platform using a smartphone.

Coeey uses OCR technology to extract information from the medical report that is uploaded to the platform. This information is then recorded in the health summary which the patient can share with a physician while seeking medical advice. The user also receives alerts/notifications based on the markers that are consistent

with their medical conditions. Coeey is built on the Microsoft azure cloud platform and uses Java as primary language for back-end systems. They also use machine learning technology (natural language processing) to provide automated responses to certain queries by the users.

This is a real-time solution. It has gone live recently covering 6,000 patients and 176 physicians.

Checks & balances

Electronic health records and their easy accessibility have made medical records systems quite efficient. Standardised digitization has made updation of reporting quite easy and it has also reduced the need for unnecessary tests. However, concerns over data privacy and legal liabilities have to be taken into account. Coeey has made sure that they safeguard all confidential data against any irregularity by:

- Adhering to the best standards on health information privacy and security viz., HL7, HIPAA etc.,
- Obtaining patient authorisation for information sharing so that it is evident that that he/she is in control.

Their platform has been built on Restful API. Hence, any system that is willing to offer their API will be able to connect with Coeey’s platform. They comply with FHIR format that is prescribed in the United States with respect to healthcare informatics regulations.

Long term goals

Coeey Technologies plans to:

- Increase the App reach to 500,000 downloads.
- Reach a level of 100,000 active user engagements per month.
- Provide health benefits to patients visiting primary health care centres and government hospitals in Indian cities & districts.

Beneficiaries Speak

“Helped to track my mom’s health. It really helped me a lot in tracking my mom’s health. Also helped to improve my habitation over medical care.”

“Great user experience. Thanks Coeey for nice devices and app to analyse my health”.

“Simple to use, my doctors love it”.

MILESTONES

1 Lakh downloads of Coeey app till date

About 12,000 active users per month as of now

More than 1000 devices sold in a year

Platform sales have gone live with more than 6000 patients and 175 physicians

Partnered with homecare companies, diabetes management companies, senior living communities etc.

Available across India on e-commerce portals like Amazon. The company is part of the Amazon Launchpad and leverages ‘Alexa’ that could take the company globally

Social media presence on Facebook and blogs with dedicated readership

The Protective Force



**EASYM2M TECHNOLOGIES
PVT LTD
SMARTKAVACH SOLUTION**

We have always looked up to our parents. Their keen eyes followed our adventures daily and kept us from harm while growing up. They have been our superheroes. It is impossible to imagine that one day our protectors would require something to protect them while performing their daily tasks.

However, that day does come. The undeniable impact of age and frailty reveals its nasty head when you least expect it.

Priya Ranjan Kumar woke up to this reality when calamity struck his family. His mother fractured her right knee and hip bone in two separate falls, and his father suffered a heart attack. They were in Bhagalpur, Bihar. He was in Bangalore, over 2,000 kms away. He could do nothing to help them as it would take him over 24 hours to reach them.

This was the founding moment that brought about the thought of SmartKavach, a wearable camera smartwatch that has elderly care features like a fall alert with GPS location and time, SOS SMS to caregivers, auto answer, and a live stream video feature to connect with paramedics.

The design and development of the SmartKavach hardware began in October 2014. Rinku Ranjan, seed investor and Co-Founder joined hands with Priya Ranjan Kumar, Founder Director & Chief Technology Officer at EasyM2M Technologies Pvt. Ltd. in May 2015 to develop this product further. They were also granted a seed funding of INR 8 lakh

from IIT Bangalore Innovation Centre.

SmartKavach

Safety Wearables for Senior Citizens

SmartKavach is a standalone safety device with an Android based operating system that can be worn on the wrist. Gmail phonebook contacts can be synced easily with SmartKavach to enable SMS/ whatsapp messages and phone calls to be made easily. The rising growth in the



"I noticed that the app manages to keep students, across all reading levels, engaged. A combination of the app being child friendly, interesting content and the novelty of the tabs ensure that the students are hooked."

Vishal DB 2015 TFI Fellow

number of nuclear families has made accessibility to real-time accident help for seniors, at home and outside, a big concern. This product is a technological intermediary between users and first responders, in case of an emergency.

One to one: Individuals can keep in touch with their parents from wherever they are. Pressing the power button 3 times sends an SMS to the police with GPS location-a unique feature that comes in handy in medico-legal cases.

The geo-fencing enabled alerts are useful for people with Alzheimer's or other degenerative diseases that cause disorientation and affect short term memory. Patients can go on walks without worries. SmartKavach warns the guardians with an SMS about the moment of the beneficiary as they wander out of the home boundary, defined by the cloud IoT platform.

NGOs & Care Centres: One such beneficiary of SmartKavach is Aaji Care in Mumbai, a provider of home health care services and geriatric assistance. Senior citizens can call or SMS the service providers as per their needs. This has helped Aaji Care channelize their home care support staff visits in a more resourceful manner. The auto answer feature allows Aaji Care professionals to speak with the patients even if their calls go unanswered for some reason.

Hospitals: Most secondary and tertiary care hospitals have a robust Hospital Information System and Patient Health Records (PHR) network. SmartKavach has a flexible software architecture that allows

it to adapt its mobile application to vital measurement devices via bluetooth. This makes the PHR seamlessly available to all hospitals for smoother functioning.

Using simple technology to make a big difference

EasyM2M designed the smartwatch and has tied up with a manufacturing partner. The cloud IoT platform of SmartKavach has been designed and developed in-house. The operating system is hardware independent. The apps can be licensed and installed on android devices and trackers or ported to iOS or Tizen platform. Its easy integration with Bluetooth based ECG, SPO2, blood glucose, heart rate and other devices make it a one point stop for medical records and data analytics. Industrial gas sensors and temperature sensor tools can be incorporated for remote monitoring capability in the EasyM2M SaaS solution.

The costly ambulance routing services are provided free of cost to the collaborating hospitals and traffic control room. Private ambulance companies and hospitals with ambulances can see remote accident victims with one touch voice & video call via SmartKavach devices worn by the paramedics.

EasyM2M aims to reduce the road accident deaths by 10-30 % by providing tele-video access to doctors while the patient is in transit.

MILESTONES

October 2014
- Smart Kavach
Hardware
Development

May 2015 -
EasyM2M
Technologies Pvt.
Ltd. is formed with
seed investor and
co- founder
Rinku Ranjan

August 2015 -
Sunil Kumar joins
as Co-founder
Hospital
ambulance
requirement
validation starts

August 2016
- Mobile OS,
APP and
Cloud Saas
development
ready for Beta
Trial

October 2016
- Software
feature
update for
Beta Trial

December 2016 -
Final Beta Trial with
Manipal Hospital
Bangalore

SmartKavach becomes smarter

A success story is always dotted with struggles and pleasant surprises, more so in the initial stages. The team was posed with innumerable questions such as – “How is this better than a smartphone? Ambulances already have CCTV then why include televideo? What is machine to machine communication? What happens if I am unable to take a call? How will I call someone if I fall and become unconscious?” etc.

This inspired EasyM2M to address the questions by making relevant modifications in SmartKavach. Some of the phone’s important features are:

1. Auto answer after 3 rings
2. SMS location tracking for selected phone numbers
3. Sensor guided fall/unconsciousness alert. Call/SMS/email announcing “A fall has been detected. Do you need assistance?” YES/NO button
4. Medical/Police SOS button that calls primary contact or authorities
5. Personal SOS button for private conversation with caregivers
6. 2G/3G, WiFi, Bluetooth, 5 MP Camera
7. Anti-theft Sim change alert
8. Pill reminder
9. Live video streaming, Audio/Video chat

SmartKavach will be available at a one-time price with iOS apps with lifetime support of Anti-theft features and location tracking in police cases. It can be bought via online portals, over hospital pharmacy counters and it can also be ordered through cardiologists and Alzheimer’s/Dementia/Neuro clinics.

Other revenue models include one time distributor price in advance for enterprise as well as care models, EMI facilities for hospitals and monthly rentals for Cloud Saas, storage etc.

Long term goals

- A private helpline call center like 911 for any emergency assistance.
- SmartKavach watch hardware and Saas subscription sales to hospitals for ambulance staff and surgery patients.
- Low cost wireless connector hardware for asset and patient monitoring in Hospital Automation software.
- Data Analytics based on EHR/PHR and state-wise hospital network.
- OS customization for other wireless devices or smart watch manufacturers like Zebra, Samsung, Lively, Care Predict etc.
- Sales & marketing of SmartKavach solution to 3-50 international market sales.
- To open a paramedical college in India with clinical and medical device expertise.

Beneficiaries speak

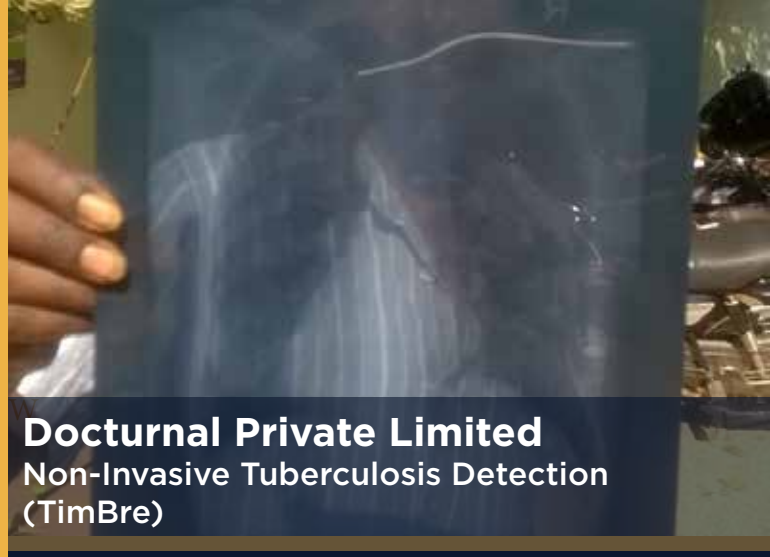
“My father is 74 years old, and sometimes he forgets things. I wanted to know his location during morning and evening walk and also talk to him even if he is unable to answer the call”.

Mr. Vineet Mohan, Gurgaon

“EasyM2M Technologies Pvt Ltd is promising IoT startup incubated and funded by IITB Innovation Centre, Bangalore. Their SmartKavach Solution designed for elderly care, women’s safety, and saving the lives of road accident victims is very innovative. It could potentially save many lives through timely alerts and attention.”

**D.V Jagadish, CEO,
IITB Innovation Centre**

Towards a TB Free World



Docturnal Private Limited Non-Invasive Tuberculosis Detection (TimBre)

Innovators across the ages have always been able to find creative solutions to the most difficult of problems- making the impossible, possible. With the ambitious aim to help eradicate Tuberculosis in India, Rahul Pathri and his team at Docturnal Private Limited from Secunderbad are no different, becoming the first movers in the field to create a low cost non-invasive screening device to diagnose TB patients.

Inspired by the personal loss of his friend to a TB induced lung collapse and his mother to TB contraction, Rahul Pathri, Founder and CEO at Docturnal, gave up his comfortable job in the BI industry and found his perfect band of like-minded collaborators who have joined him in this fight against TB. Arpita Singh, ace marketer, is the acting co-founder and works pro bono with him. Practicing pathologist, Dr. Kalpana Singh has over 30 years of medical experience and acumen of working with government hospitals. Ramoji Bashupolu (RNTCP) and Ajay Keskar are involved in the spectral and clinical data sample collection of infected TB patient's front with various government hospitals.

As per World Health Organisation's (WHO) records, India is the Tuberculosis capital of the world for the second consecutive year and Multi Drug Resistant (MDR) TB is on the rise and can be fatal if it goes undetected.

It was then that Rahul wanted to find a way to screen and track TB in an affordable manner.

This is when the idea of the smart phone application, TimBre, was conceived. It

involves spectral analysis (.WAV/MP3) of a recorded sound file of a person's cough and its processing in the homegrown machine/deep learning algorithms of cough patterns. In conjunction with clinical, demographic and socio-economic data, it confirms whether it is TB or not.

Addressing the challenges

Medical Risks: Collecting cough information exposed the members to contagious bacilli bacteria.



**Don't live in fear,
TimBre removes doubt of that cough
being TB related.
Anytime, anywhere, at your
convenience!**

"Docturnal aims to utilize the phenomenal advancements in technologies to deliver healthcare to individuals who may not always have access to the solutions".

**Rahul Pathri, Founder & CEO
(Acting Data Scientist)
Docturnal Private Limited**

Stakeholder Concerns: Since TB is considered a poor man's disease, there were apprehensions from financial investors on the return on their investments.

Communication Hurdles: The organisation has released a Telugu APK for the professionals working for the state run Revised National Tuberculosis Control Program (RNTCP). These would be required to circumvent the language barriers of the program.

Internet Services: The ability of the app to collect data in an offline mode, offsets the lack of regular internet connectivity.

Privacy: The TimBre App can be used in the privacy of one's home. This significantly reduces the immense stigma attached to visiting a TB testing centre.

Cost Factors: It is a free version for the consumer. Health camps, screenings for under-privileged persons, and other large-scale initiatives can be undertaken with ease.

TimBre App – Step by step guide

- Individuals need to download the free app on their phone.
- Once the app is downloaded, they need to enter their basic information such as name, mobile number, age, occupation, marital status, height, weight and PIN code.
- Some clinical information like habits (smoking, alcohol), any history of TB or HIV, sleep and cough patterns, HbA1c, blood pressure, and other vital data.
- They can then upload an image (Chest X-Ray if it exists).
- The next and the most important step is for the individual to record his/her cough in a noiseless room, preferably in the night.
- The data then gets recorded in the homegrown database for algorithms to process it.
- Once the processing is done, an SMS is sent to the person confirming whether

the cough is TB related or not.

- The next steps are also suggested with an SMS for a nearest sputum microscopy tests, visit to a physician for the next course of treatment.

Currently there are no apps in India that use cough and machine learning to detect TB and MDR TB. A provisional patent has been filed for this with a priority date of April-2016 and a final patent is under review.

Docturnal is looking forward to the TimBre App being approved by NABL (National Accreditation Board for Testing and Calibration Laboratories). This will enable them to become 'diagnostic providers' once the specificity and sensitivity numbers are close to 90%. Until then, they will cater to mass screening as 'screening providers'.

The math and science of TimBre

Fourier Transformation is a function that reconstructs the cough signal by plotting intensity/amplitude on Y-axis against Frequency on X-axis. Discrete wavelet transformation expresses sound signals in similar fashion along with an added third dimension of time. The measure of time is an important factor for computing data. This helps in identifying the missing or abnormally high frequencies. These are then implemented for feature extraction by leveraging the CNN (Convolutional Neural Network) under deep learning umbrella to extract and understand features from the sound file.

The data obtained for one cough/patient is appended to the clinical and demographic variables such as age, gender, BMI, cough pattern, appetite pattern, existing diseases, etc. Once these are ready, SCORING for prediction is ready for a given record.

The technologies used in TimBre are Matlab, SAS, SciPy, Python, Keras, Theano, Android, and Twilio.

- The sampling rate is typically set to 10kHz or aligned with the X&Y Microphone-

Array for accurate signals. Useful features are extracted from the output of Fast Fourier Transform and Discrete Wavelet Transform.

WAV file has lossless information at a sampling rate of 44kHz and 16 bit. However, MP4 is used in regular phones to transmit media files because their sampling and bit rates are usually low to make it a small file that can easily traverse on the network.

- The labelled data is extracted for features resulting out of the WAV files and concatenated with the clinical, demographic and socio-economic variables when they are processed for decision trees, memory based reasoning (nearest neighbourhood), and logistic regression etc.
- The tool determines the best algorithm based on a threshold such as 'Misclassification Rate - Validation Data'.
- The prediction is based on a two-step process. A neural net (deep learning - CNN) followed by traditional machine learning algorithms operating upon clinical and demographic data.
- A combination of spectral and clinical/ demographic data avoids higher error rates and cough is an important symptom.

Long term goals

- Docturnal hopes to implement the product across all RNTCP Centres, major Government/Private hospitals and diagnostic labs in India and expand to foreign countries.
- Efforts are on to expand the algorithms to detect other lung-based ailments like COPD (Chronic Obstructive Pulmonary Disease), Bronchitis, Pneumonia, Whooping Cough and Asthma.
- The app, currently on Android, to be launched on Windows & iOS.
- The data will be made available to Big Pharma or research organisations.
- The TimBre App to be developed in several Indian and global languages.

Beneficiaries speak

"I come across TB patients who do not exhibit a single symptom and I hope the App will facilitate my decision making better".

Dr. Manohar
Bhoiguda Clinic, Secunderabad
First Pilot User of the App

MILESTONES

Gandhi Hospital Hyderabad is helping Docturnal with training in data collection as well as implementation (Beta).

World Vision (an NGO) facilitated the RNTCP partnership.

A Deep Tech Startup: Received INR 10 lakh seed fund and a 6-month accelerator program by the Indian Institute of Information Technology, Hyderabad's Incubator 2016-17.

2016- Digital Edge 50 Award Winner
2017- NASSCOM Social Innovation Finalist in Primary Healthcare Category

Currently signing up Beta Customers for pilot launch

Leveraging the platform for Diabetic Retinopathy screening.

Primary Healthcare

Briefs of 2016-17 Innovators

1. Augur Safety Services Private Limited

P4 Vigil

Over 62% of all antibiotic usage, takes place in India. It is estimated that on an average, a 55-year-old Indian takes at least two medicines on a daily basis. However, it must also be noted that 1 in 10 hospitalisations in this country occur due to the misuse of drugs, unpredicted drug reactions and a misdiagnoses of patients by medical professionals who lack updated information on medicinal products.

To combat this the organisation has created a mobile solution, which aims at increasing medicinal product awareness, from dosage amounts to possible drug reactions. Though the solution is available to everyone, it's target market is pharmacologists and physicians who can contribute, update and validate information on drug usage and reaction patterns. The application also allows for alerts and notifications regarding substandard products or emergency information to be sent to relevant authorities. Furthermore, the app leverages on its analytical capabilities to tailor specific notifications to select user groups eg: pregnant women, and generate reports on medical inquiries and product complaints. When scaled, the solution has the potential to affect nearly every Indian.

2. Indev Consultancy Pvt. Ltd

Nutrition Monitoring System

Nearly half of all deaths in children under five years of age, can be attributed to malnutrition. Poor nutrition in the first three years of a child's life can stunt physical and mental development, which leaves irreversible effects. Like any other country, India is also facing the challenge of malnutrition in several states. A recent census has revealed that one in two children in certain districts of Maharashtra suffer from malnutrition. Though the Government is running a number of schemes to address the problem, they lack the resources required to reach the desired scale and impact. Identifying this as a critical need area, Indev Consulting together with JSW Foundation has developed a mobile/web application that allows Anganwadi social workers to track and monitor in real time the nutrition levels of children under five, on a monthly basis using GIS technology. Data collected can be viewed and collated at the back end using a web application, enabling quick and effective decision making by concerned officials. The application is currently servicing over 1,500 children in 1 district in Maharashtra but has the potential to be further scaled given its capability of storing large amounts of data in the offline mode that can be tailored according to the regional language of choice.

3. VPadmaseetha Technologies Private Limited

Anywhere Wearable Peritoneal Dialysis Kit

Estimates suggest that 200,000 people develop end stage kidney failure every year in India, but only 100,000 patients are

currently receiving dialysis. This is because dialysis remains largely expensive and hence is reserved only for those who can afford it. A majority of the effected population belong to the lower income sections of society. Statistics show that 70-80% of patients actually do start treatment but lack the financial resources to continue.

V Padmaseetha has created an innovative wearable dialysis kit that enables patients in need to undergo low cost treatment from anywhere at any time. The kit, fitted with a software allows regular data such as vital parameters and results to be transmitted to doctors remotely via a smart phone and sends alerts in times of emergency. The organisation aims to reach over 5 lakh beneficiaries in Tamil Nadu, Telangana and Rajasthan during their first year of operations, while aiming to expand pan India gradually.

4. Profile Quest

Smart Pills

Tuberculosis (TB) effects over 2 million people in India every year, remaining one of the leading causes of death in the country. It is also estimated that during 2006-2014 the disease cost the economy over 340 billion USD. A large reason for this is that treatment- from detection to diagnosis is very expensive and long term whereby patients with TB have to take medication over an extended period of time. However, many of those affected are illiterate and uneducated, and do not recognize the importance of completing the course of medication once their symptoms show some level of improvement.

To address this issue, the organisation has developed MediBand. MediBand is a low cost wearable device that uses IoT technology to alert users when it is time to take particular medication. All the medication is RF tagged to ensure seamless linkage with the band. The band also provides a real time connect between patient, doctors and pharma's sending updates and feedback on dosage and drug reactions to the relevant stakeholder via a mobile app. The device, which is aimed at

reducing the dependency of the patient on medicine schedules, has the ability to reach over a 100 million TB afflicted patients across the country.

5. Arogya World

Using mobile technology to prevent diabetes

India is home to 66 million diabetic patients, with recent estimates from the International Diabetes Federation predicting that number to reach 87 million by 2030. Data also shows that Indians develop diabetes ten years earlier than citizens from western countries, meaning that the economic burden of treatment is substantially higher for those affected. Estimates suggest that 25% of a poor family's income is spent on diabetic treatment.

mDiabetes was launched by the organisation in 2011, in partnership with Nokia. The SMS based application transmitted 56 million text messages with content on health behaviour known to prevent diabetes. All messages were culturally adapted according to user base and were sent out twice a week for 6 months. The results of the pilot showed that 15% of participants improved their health behaviour because of the text messages. The study, is published in the August 2016, Journal of Medical and internet Research. Riding on their success of the mDiabetes campaign, Arogya World has identified partners through which to scale similar diabetes based text message campaigns. The mDiabetes campaign reached 1 million people across India over 2012-2013, whilst new campaigns are looking to reach over 1.5 million people in the coming year.

6. Healthier Hearts Foundation

To Touch Million Hearts By 2020

Despite advanced diagnosis, cardiovascular

disease (CVD) is the leading cause of death in India. Gaps in treatment such as unnecessary testing, procedures, and hospitalizations occur often, with less than optimal patient outcomes. Furthermore, the disparity in the distribution of knowledge and resources between urban and rural populations has meant that treatment has been concentrated in urban areas making it inaccessible to the poor.

Healthier Hearts Foundation with the goal of touching a million hearts by 2020 runs free health awareness and check-up camps in remote locations, so as to spread awareness and provide treatment for those who have limited access. The Foundation uses a number of medical technologies in these camps such as ECG and ECHO machines. The camps also aim to train and educate individuals in partner regions with cardiovascular diseases on how to use health technologies for their own benefit and the benefit of other patients in their community. Through the camps, organisation workers are able to capture data on specific health indicators like immunization levels, ongoing epidemics etc, at the grassroot level.

Mainly working in the tribal and rural areas of Telangana State, the program has been able to touch 3 Lakh persons till date

7. Indian Academy of Pediatrics

IAP-ImmunizeIndia

1.2 million children under the age of five, die each year in India. Another 1-2 million develop some form of disability. Many a time the cause for this has been that these children have not received all the necessary vaccinations. Though there are a number of government run free vaccination schemes, many parents do not immunize their children, because they forget vaccination schedules.

IAP-ImmunizeIndia is the world's largest vaccination reminder service, available free of cost to parents anywhere in India. It is a national non-profit initiative under the aegis of Indian Academy of Paediatrics

(IAP) supported by Vodafone. The service is run using text messages, making it highly cost effective and scalable. For each vaccination 3 reminders are sent at a 2 day interval, in the week leading up to the vaccination.

Till date, the organisation has saved over 20,000 children and prevented disabilities in over 15,000 while impacting over a million parents. Through its service, the organisation aims to reach over 20 million children by 2020

8. World Vision India

Shishu Janani Seva

The instances of Maternal Mortality remain quite high in India at present. Current data from the Registrar General India's Sample Registration System suggests that the Maternal Mortality Ratio (MMR) is 167 deaths per 100,000 live births, putting the number of maternal deaths at around 44,000 each year. Though there are a number of government schemes for prospective mothers these alarming figures that have a lasting impact on infant health and mortality have been largely caused by, low literacy levels, lack of knowledge on good health practices, harmful social customs and traditions and unaffordability to quality prenatal and antenatal care. To exacerbate the problem the current healthcare system is multi tiered with women healthcare workers being tasked with providing primary health services to both expecting mothers and children. Each health worker is responsible for catering to 2,000- 3,000 families, whose health data they still capture manually.

To ease the burden of these health workers and fill the lacunae, the organisation in partnership with Bengaluru Municipal Corporation and Baxter Foundation has developed Shishu Janani Seva a mobile health application. The application aimed at providing information on antenatal and postnatal care to expecting mothers also allows for the tracking of health parameters for children below 2 years of age. The application is built based on the

health service delivery system of the Bengaluru BBMP, which uses the 'Thai Card' to map its information matrix. The Thai Card is a health information card given to all pregnant women and new mothers. The application can be used by health workers, to track all relevant health information of mother and child and by mothers who can use the application to receive audio-visual messages on pregnancy related/post-natal information as well as health and immunization related reminders. Over 788 mothers and 17 health workers are using the android application so far.

9. India HIV AIDS Alliance

Vihaan

First appearing in the global spotlight in the 1980's HIV was and still is one of the most dangerous epidemics to exist in the 20th century. So much so, that people associate high levels of fear and stigma to people suffering from the virus. As of 2011, statistics suggest that there are an estimated 2.1 million people living with HIV in India. Though much medical progress has been made in the field, which has led to a decrease in the annual new cases of HIV reported by 57%, the disease is still a major threat to the healthcare sector. In an effort to bridge the gap India HIV Aids Alliance has implemented Vihaan.

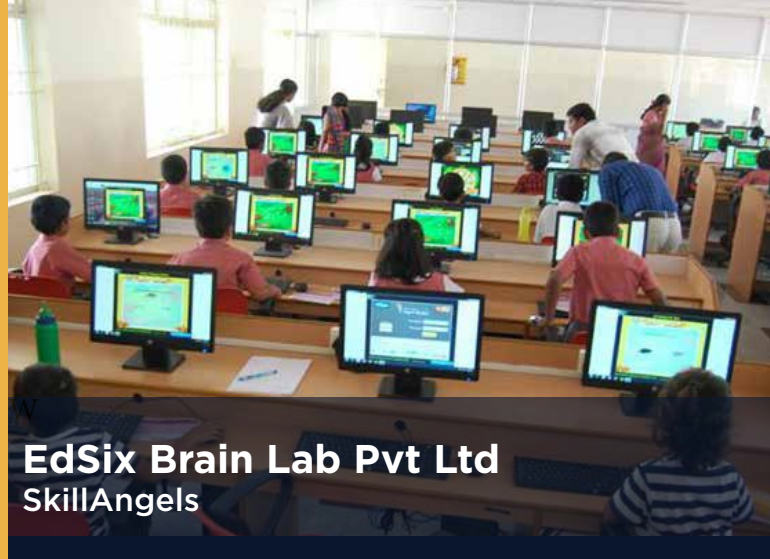
Vihaan is a program that extends care and support in the form of treatment, reduction of stigma and discrimination for people living with HIV. The organization does this through 350 care and support centres across the country. To further enable the program the organization has developed eMpower a Client Management Information System to track and ensure effective follow up for HIV patients. EMpower is used by the programs outreach workers and is in the form of a tablet based application. The app currently has more than 10 Lakh users registered on it.

Primary and

Secondary Education



Leveraging Education for Skill Development



EdSix Brain Lab Pvt Ltd
SkillAngels

Students of today are the professionals of tomorrow. And a nation is as young and agile as its workforce. Saravanan Sundaramoorthy understands this very well.

Saravanan, a PMP professional with an MBA degree, worked for a corporate. Even after interviewing thousands of students for various jobs, he realized that academically successful students were not always equipped with strong critical thinking skills. It was a herculean task to find people who possessed both domain skills and the ability to think strategically. Corporates would be required to invest heavily in training and development to equip their employees with the necessary skill sets. However, many of these corporates lacked robust techniques to measure the effectiveness of the training program.

Due to this, there was an alarming rate of professionals that were lacking the skills to be successful at their work - leading to a high rate of unemployment. Saravanan decided to tackle this challenge and take steps to address it.

He realised that this problem arose in the education system of the country and the uninspiring conventional pedagogies that failed to stimulate young minds. Today's educational system does not prepare students to develop critical thinking skills and focuses entirely on academic training. Basic human ability to grasp, comprehend and apply knowledge in any field requires a strong foundation of the basics. To combat this, EdSix Brain Lab developed SkillAngels™, -an assessment and training platform.

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SkillAngels™: Filling the gaps of today's educational system

SkillAngels™ is India's largest gamified Cognitive Skill Development and Assessment Platform with a customizable skill engine, aimed at establishing 5 core skills (Problem Solving, Memory, Focus & Attention, Visual Processing, and Linguistics) across domains and age groups with 500 + games.



“Being part of the system for too long quells creativity. The mind of a child needs nourishment and what they need apart from theory is practical knowledge and emotional intelligence. Every child has some innate talent that can be and must be nurtured in the right way”.

Saravanan Sundaramoorthy
Founder & CEO
EdSix Brain Lab Pvt Ltd

The idea of SkillAngels™ was born in 2013 to help children develop cognitive skills that kept pace with the 21st century. Together with Co-Founder & Chief Architect Kalpana Murthy, Saravanan worked on the validation of this concept with 30-40 students from a school in Puducherry. The results were positive. In 2013, SkillAngels™ was incubated within the Rural Technology Business Incubator at IIT Chennai and funded by IIM Ahmedabad's Centre for Innovation Incubation and Entrepreneurship (CIIE) as well.

The SkillAngels™ suite is carefully developed by a team of Education Experts, Developmental Paediatricians and Clinical Psychologists to ensure a holistic learning platform. It enhances the thinking and cognitive skills through gamified content.

It is an online cloud based platform and all flash based products are now being moved to HTML5. For schools in remote villages with intermittent internet connection, Virtual Machines with MySQL have been deployed. SkillAngels™ provides a multilingual platform of regional Indian languages for K-12 students.

How SkillAngels™ works

Personalised engine for children

1 or 2 sessions of 5 puzzles each are incorporated in the school timetable of every child to ensure participation and continuity. If a class V student takes the test, and the platform identifies the memory power of the child to be that of a class III level, then the engine switches to work at class II level. The child is assessed for skills and is automatically upgraded to the next level in the case of an improvement. Else, more puzzles of class II level help the child come up to speed with the skills.

The game engine is customizable with the objective of promoting domain specific cognitive skills.

For differently abled children

Gamified assessments is a well proven

methodology for children with special needs, learning difficulties, and uneven learning. Developmental paediatricians engage with SkillAngels™ in the development of certain specific modules. Improvement in their cognitive skills are measured through the measurement indicator (BSPI) Brain Skill Power Index. For instance, most children with cerebral palsy or medium to severe conditions were not able to identify capital letters. Once the engine found a solution for this, they were seen to engage more.

For corporates

The platform is being used by many companies for hiring employees based on their cognitive quotient. It helps in finding the right talent by arriving at organizational baseline scores for each job profile.

Impact Indicators

- Tracking real time game play data, compute skill score and measure BSPI.
- Percentage of improvement in BSPI (Brain Skill Power Index).
- 3 Phase Approach: Pre assessment.
- Training Sessions - Post assessment - Analytics & Inferences.
- BSPI measured at each phase and the progression is tracked.
- Personalized training is enabled based on the performance.

Long term goals

- Apply for patent of Brain Skill to Curriculum Mapping Index.
- Complete the platform migration from Adobe Flash to HTML5.
- Launch the platform through mobile apps by the end of March 2017.
- Extend the research in Neuro science and develop a special gaming engine for differently able children.
- Work on gamified emotional intelligence assessment.
- Implement SkillAngels™ in 50 private and 100 Government schools in India, 5 schools outside India, and reach over 50000 users by December 2017.
- Launch in Singapore by March 2017 and

in Middle Eastern countries by April 2017.

Benefeciaries speak

"We can see drastic improvement in the cognitive skills of our students when they are exposed to SkillAngels product. Apart from the product, the programs conducted by SkillAngels team has a great impact upon the students in increasing their interests in solving aptitude oriented puzzles".

**Dr. Danathiyagou, Director
Alpha Educational Institutions, Puducherry**

"Teaching social skills, life skills and cognitive skills are important. Using gamification technique, it will train them to face big challenges in life. Parents should encourage and students should eagerly learn by spending time playing. It will help them to be successful, resulting in a stronger and spectacular next generation".

**Shri CK Ranganathan
Chairman & Managing Director
CavinKare Pvt Ltd**

"Difference between other generic computer games and 'SkillAngels' games is that it develops the core brain skills. It will help not only in their studies, but will also give a holistic development. It will increase the speed of execution to approach a real life situation which is necessary for today's generation".

**Dr.M.Shyamala Devi
Developmental & Behavioral Paediatrician
Apollo Children Hospital**

MILESTONES

Pan India presence
in 24 states,
210 cities

5 Schools with
full implementation

Users from over 12
countries and 400
cities (b2c)

Content
available in
multiple Indian
languages

India's first gamified
21st Century Skill
Assessment &
Training Platform
-Patent Applied
and waiting to
be awarded

2014-
Best Startup -
Ministry of
Communications & IT,
Govt. of India

2014 -
QPrize Finalist

2013 -
Village Capital

2013 -
Tech4Impact
Accelerator Program
- IIM Ahmedabad's
CIIE

Recognized as
startup under the
"Start Up India
Stand up India"
Scheme launched
by Department
of Industrial
Promotion and
Policy (DIPP),
Govt. of India

2014
-Hot 100
Technology Award
- Hot100

2014
- People's Choice
Best Startup - CII
Startuppreneurs

Featured in Startup
India 2016 - Launch
event by PM Shri
Narendra Modi.

Finalists - CavinKare - MMA
Chinnikrishnan Innovation
Awards 2016

Transforming learning

through mEducation



A mother of two, Radhika Shinde works at an upscale beauty parlour in Mumbai. Her son Sameer, is in the 4th standard of a government primary school. Even though Radhika makes sure that Sameer revises his lessons and does his homework on time, she is not able to help him better his grades in English. This makes her feel helpless.

This is a concern shared by a majority of parents whose children study in government or affordable private schools. According to an ASER report (2004-2014), over half the students in government schools that are studying in Standard 5 are reading and doing Math at a standard 2 level or lower. Worried about the state of primary education in Indian schools and the magnitude of the problem, Adam Khorakiwala believed that independent and engaging learning tools was the need of the hour. After spending months observing the debilitating infrastructure within government schools. Adam, a graduate from Stanford with a degree in Public Policy and a Minor in Computer Science, together with his small team of engineers and educators, decided to utilize the pervasive potential of mobile technology to develop mGuru- a mobile app providing literacy and numeracy learning. The application aims to drive better learning outcomes for underprivileged students.

Their pilot test group was a group of 3rd and 4th standard students from a local BMC school in Mumbai. The initial reactions were promising with respect to the excitement and engagement from students with the apps, but the team soon realised that there was much work to be done.

They knew they had to create easy-to-use applications, which children could use independently without supervision from teachers. Product development was easy. The challenge was to create beautifully designed user friendly apps, that moved children past the initial euphoria of technology towards engagement and learning.

Their primary objective was to cover skill sets rather than a set syllabus, such as providing children with a basic knowledge



"I noticed that the app manages to keep students, across all reading levels, engaged. A combination of the app being child friendly, interesting content and the novelty of the tabs ensure that the students are hooked."

Vishal DB 2015 TFI Fellow

of phonetics and arithmetic –important building blocks for both English and Math. There was also a need to overcome the traditional hurdles within the existing system, such as the practice of rote learning and ineffective teaching styles. Through the use of mobile applications, mGuru believes it can help children practice their English and Math skills every day.

mGuru

To make learning English and Maths easy and engaging, mGuru has developed two mobile learning applications to help students from K-5 gain basic literacy and numeracy skills.

mGuru English, the English learning app, helps the child gain the skills and exposure they need to read and communicate in English. The app works without internet and is available in several local languages (Hindi, Marathi, Gujarati, and Bengali for now). It provides engaging stories, activities, speaking and listening exercises, grammar activities, a comprehensive phonics and an early learners program. Adam has collaborated with Pratham Books / Storyweaver for their stories and also regularly receives pedagogical inputs and reviews from their English team. They have also collaborated with LeapForWord, an NGO specializing in English language learning for children in this demographic, in order to refine their pedagogy.

The entire learning path is arranged and curated to impart all the material the child requires, while being engaged and having fun in the process. Virtual rewards in the form of mangoes have been included to motivate the students. The students can utilize these mangoes when they wish to unlock more stories. Furthermore, parents receive live digital report cards and SMS alerts with reminders and those milestones achieved by their child as they move from concept to concept, enabling them to track progress in a transparent and easy manner. The team implements changes constantly to improve lessons and provide better and more engaging experience. By being the only app on the market with local language

instruction and a focus on students under Standard 5, mGuru has impacted over 1,500 students along with their parents. mGuru Math is still in the development stage and will provide students with unlimited practice problems & regular assessments offline, designed for the local curricula.

Impact

- As of December 2016, mGuru has benefitted around 15,000 students with the majority of users in Mumbai.
- Students in Ahmedabad, Pune, Delhi, Kolkata, Bangalore and other smaller cities have been using the app with high success rates.
- Apart from helping students from lower economic backgrounds to learn English and Math better than they would at school, mGuru also helps teachers and parents track their progress.
- With almost zero marginal costs for serving an additional student and no internet requirement to use the app, mGuru is all set to lead the K-5 educational app field.

“It made no sense to us that families would have access to the world’s knowledge in their pockets at the same time that children would have such poor learning standard.”

**Adam Khorakiwala,
Founder and CEO, mGuru**

MILESTONES

Jan 2016:
Month long
classroom test with
mGuru Prototype

Feb-Mar 2016:
Public beta release
of mGuru Prototype

April - July 2016:
Full-scale redesign
of app based on
feedback and data

August 2016:
Launch of
mGuru English

December 2016:
NSIF Finalist. 15,000
users reached

Long term goals

With all obstacles such as expensive smartphones, an internet connection, a good school and the need for a good teacher removed, mGuru aims to:

- Obtain a user base of 1 million by the end of 2017.
- Establish partnerships with NGOs, educational institutes and the government to reach and benefit as many children as possible.
- Be able to statistically demonstrate an increase in the national averages in learning outcomes for literacy and numeracy skills from mGuru usage.

“Some of the features like story books of Pratham and Online monitoring of kids growth are mind blowing. Through the data/report card, we can actually understand the trends that can make learning of various parts of the literacy elements, in and out of our classrooms, very effective.”

**Parth Bhalara, Teacher,
Mangalam School**

Beneficiaries speak

“It is designed for kids of different levels in a very structured manner i.e. from words to paragraphs. It is exactly the way I wanted. I did a pilot testing in my class. I am not saying that they have mastered everything but yeah, the results are really good. To all teachers, I’ll personally suggest to try this app once. mGuru will be a great help.”

**Ishpreet Kaur,
M.G.School, TFI 2016**

“I like mGuru because it is fun and I read better. Stories and mangoes are my favourite. I like the story “Aaloo, Maloo, and Kaloo”. It is fun and I learn to read also!”

**Student at Sai Baba
Path Public School**

Bringing back the fun in learning



Headstreams
Arivu-Disha

Playing has always been the most exciting activity for any child. Every time you ask a child what they would like to do, their response invariably would be to play a game. However, this activity is losing its charm with the emergence of mundane, difficult to learn school activities.

In 2008, a group of professionals from different walks of life came together with a genuine concern to combat traditional learning methods and incorporate play into learning to make it engaging for children.

It is with the vision to bring back fun and play into education that Headstreams was founded. It is a non-profit organization based in Bengaluru that promotes the social and psychological well-being of individuals and community. Dr. Naveen I. Thomas, a trained social worker from Tata Institute of Social Sciences, Mumbai and other experts in the field of education, mental health and community development formed a core group to understand and find solutions to lack of engagement in learning and education.

Since 2008, Headstreams has been working in Bengaluru and other locations in Karnataka.

Key Insights

Their prior work with low-income women self-help groups in Karnataka along with close association with children and youth in slums and other marginalised communities gave the team a head start. They identified the following critical insights:

- There was general disillusionment with the current education system among students, which resulted in lack of motivation and thus, loss of engagement in the learning process.
- Many children also dropped out of school in Standard 8 for various reasons such as poverty, taking care of siblings, involvement in income-generating activities, farm labour, distance from schools, or safety



“Learning is a by-product of playing”.

Dr. Naveen I. Thomas,
Founder, Headstreams

“English helps him to interact with customers who cannot speak in Telugu or Kannada”. Recently he performed in an English play, which was well appreciated by those who watched it”.

Selvi, A student’s mother

issues (for girls).

- The most recent Annual Survey of Education Report (ASER) showed that most Standard 6 students couldn't even read a Standard 6 English textbook.
- Over one in five students failed to clear the English paper in their Standard 10 exams, leading to dropouts and reduced access to higher education opportunities. This also meant lower wages in their working life.
- Digital experiences in government schools were greatly limited due to the non-availability of enough devices per child, unreliable electricity supply, and no facility of repair and maintenance of computers.

To bring back the joy of learning for children and youth, Headstreams has created Arivu-Disha – an app which strives to create an engaging atmosphere for children from Government schools so as to augment their learning.

Arivu-Disha Bi-lingual English Language Learning & Gaming App

The 'Learning Through Play' Concept

Arivu-Disha, a tablet based application, is a combination of rich audio-visual content and customised digital games built on the Android platform. It uses 'free-play' as an educational tool.

The programme focuses on enabling skills – English reading, comprehension, digital literacy and life skills. Children get uninterrupted access to individual tablets with headphones for 45 minutes a week. The facilitators carry the tablets to a different school every day. Through this, students from multiple schools are being served with the same set of devices.

This program is being conducted for Standard 6 and 7 students, in 30 government schools of Bengaluru,

Hosakote and Kolar in Karnataka.

The main components of this programme are:

Arivu Comics: A starter story of two government school students, Balu and Chinu, who travel around Karnataka, India and the world in 24 sessions. They keep listeners engaged with their adventures. The narration of the stories are in Kannada and the conversations are in English to help children pick up the language from the dialogues.

Interactive Games: A customised gaming app based on these comics measures the recall and understanding of children. The game instructions are in English.

Dial-to-Learn, a 'Missed Call Service': The content is uploaded on their Interactive Voice Response (IVR) system. If a child calls and disconnects, they will be called back and are able to listen to songs and stories taught in the class.

The pilot program has been started with English, as the language has a stronghold in the higher education and job landscape of India. For instance, the inability to comprehend English, de-motivate even the strongest students from taking up their choice of subjects while pursuing higher education. Reports show that individuals fluent in English get significantly higher wages than those who know little or no English- the difference being as high as 34% at times!

Creative Partners

Headstreams has collaborated with Ludowise, an Indo-Dutch learning digital game app developer. Ludowise is a joint venture between Ijsfontein (a leader in gamification in Netherlands) and Dhruva Interactive (a leading game art developing studio in India). Ijsfontein is also known for its serious gaming apps for professional training and interactive experiences modules for museums.

Gamification and creative elements such as bi-lingual stories are used to engage

the learners and enhance English language learning for non-native English speakers. The narration of the stories are planned in vernacular languages, with the dialogues and the visual text in English. It helps children associate with contextually relevant content, while getting familiar with new English words, correct pronunciations and usage, thereby ultimately improving their English vocabulary and communication.

Arivu-Disha is funded by Mphasis F1 Foundation, who have been a support to Headstreams since the start.

Impact

Joy of learning is a life-long process that never stops, a process that creates a logical individual.

- Educator Marva Collins

This is the long-term impact Arivu-Disha wishes to have on its users. They are currently in their second year and the response has been overwhelming. Some of the key impact metrics measured in February 2017 were:

- The class attendance is almost 100% on the project days as compared to regular school days.
- Children from neighbouring villages are enrolling with Arivu partner schools due to availability of digital learning through tabs and English.
- Children have stopped missing English exams.
- Children call up the IVR lines as many as 4 times to listen and read out the same story. With every call their comprehension and reading increases.
- Playing diminishes boundaries. The children became friendly with facilitators and are able to share their fears concerns easily.
- There has been an increase in confidence levels.
- Class engagement and positive behavioural change has been noticed in 77% of the children by their families and teachers.

• Some other statistics:

	Others	Arivu Schools
Sentence Reading Levels have increased	31%	51%
Sentence Comprehension	23%	32%
Teacher reported figures of English conversation ability	N.A.	74%

Long term goals

Arivu-Disha plans to:

- Introduce other subjects through blended learning and a dedicated activity and digital experiential space.
- Expand to affordable private schools and their students in the project.
- Use subscription model to generate revenues.
- Increase its base of government schools
- Expand beyond Karnataka and introduce more languages.
- Have more tablets to cover more schools at a time.
- Look at solar options for charging the Tabs.
- Start from the 4th standard from next year.
- Take the learning project across the K-12 band eventually.

Beneficiaries speak

“Compared to the previous (academic) year, Thilak’s scores have improved from C / C+ to B/ B+. Initially, he would simply nod his head and copy instructions from the board without understanding. Now, Thilak observes, understands and produces good quality work. Initially, he could not read in English. Now, he joins letters, recognises the sounds of the letters and identifies the words”.

Ms. Jalajakshi, English teacher in Hoodi School Bangalore

Spreading the joy of reading



**Pratham Books
StoryWeaver**

Reading a book, an activity that most of us take for granted, remains but an aspirational dream for many individuals. This is even more crucial for children, when you consider the pivotal role of reading in early childhood development. But what do you do when there is no reading material in a language that you can understand? According to a UNESCO report, children should be taught in a language they understand, yet 40% of the global population does not have access to education in a language they speak or read. In India, there is a critical shortage in the supply of joyful reading resources for children - not enough books, in not enough languages, compounded by poor access and issues of affordability. With most publishers catering to the middle and upper income urban audiences, demand based economics does not leave much room for the creation of books for the economically weaker groups, where the profit motive is low.

Pratham Books, a world renowned not-for-profit, children's books publisher was set up to address this gap, and publishes high quality, affordable books for underprivileged children to create equitable access to books for all children. Their mission is to see 'a book in every child's hand' and while they have reached millions of children, they believe they still had a long way to go.

In order to scale the creation and distribution of multilingual storybooks they started releasing their content under the Creative Commons license. This allowed users across the world to adapt the content to create locally relevant

reading material. The ability to use open licences and technology as a strategy to forward their mission, led to the launch of StoryWeaver- an open source platform hosting a repository of multilingual children's stories. The platform is open to children, parents and educators and even other publishers.

StoryWeaver - a new paradigm in publishing



"The stories available on StoryWeaver are thematic and lend themselves to many topics in the primary syllabus of the state. The stories complement many of the grade 1-3 lesson plans that we at Meghshala create for schools."

**Jaimala, Master Teacher
with Meghshala**

StoryWeaver is India's first digital, open source repository of multilingual children's stories. Users can read, download and print all its stories as well as use the tools embedded on the platform to create and translate content into more languages and versions. The goal is to bring together content users and content creators and create a participatory culture that will catalyze the creation of more reading material.

All the stories on StoryWeaver are licensed using one of the most liberal Creative Commons licenses, CC-BY 4.0, which allowed the repository to grow from 800 stories in 24 languages, to one with over 2800 stories in 62 languages.

StoryWeaver is a responsive platform and can be accessed on desktops, laptops, tablets and mobiles.

Using technology to increase reach

StoryWeaver has been built using FOSS (Free and Open Source System). The architecture is modular so various components can be scaled without impacting other parts of the system. The API approach allows for faster modifications without having to change too many things. It also helps create API's for third party users depending on specific use-cases.

StoryWeaver has been designed keeping the lack of resources for the lower-income groups in mind. It has a simple, clean, non-bandwidth intensive interface and the stories are available in different resolutions which reduces the data to download as well as increases the speed of the download. One of the reasons that StoryWeaver has scaled so rapidly is that it is Unicode compliant, which means that the text is transportable easily across different devices and every word of every story is searchable, in the language of the story. While this is on the wish list of most publishers in India, it is a difficult task due to the complexity of Indian scripts.

This helped scale the platform from 24 to 62 languages in 18 months. Complex scripts like Khmer, Farsi and Kurdish can now be added with relative ease.

Unity in diverse languages

In a country as linguistically diverse as India, creating original content and translating that into the many hundreds of languages and dialects spoken is a daunting task. StoryWeaver's transliteration tool is enabled for 10+ Indian languages and allows users to type phonetically in English and get options to choose from. This is an important tool as this creates a seamless user experience, as well as overcomes the shortage in Indian language keyboards.

The Konkani Bhasha Mandal has translated and reviewed many titles for children in Konkani. Suchana, an organisation working with Adivasi children in Birbhum, West Bengal has translated 68 books to Kora and Santali (both in the Bangla script), while Samskrita Bharati has enriched StoryWeaver with 58 titles in Sanskrit, to teach the classical language to a new generation of learners. Languages like Saurashtra and Alemannisch, both of which are dying languages, have also been added at user requests.

Impact

September 2015 to January 2017

- Currently over 2,900 stories in 62 languages of the world.
- The stories have been read over 900,000 times on the platform and on other sites and applications.
- 180,000 unique visitors on the platform.
- Stories have been downloaded over 90,000 times.
- Global user base from 211 countries.
- Content is also available on other digital libraries - The Bloom Library, African Storybook Project, World Reader, iArabicReader and Free Kids Books - increasing their reach even more.

Long term goals

- StoryWeaver envisions itself as one of the largest repositories of open source, multilingual children's stories not just in India, but across the world.
- Hope to continue to inspire and empower everyone from first time writers and professional translators, to illustrators as well as other book publishers to join hands to create much needed multilingual reading resources for children.
- To open the doors to an endless free library for children.
- To invest deeply in technology to create a vibrant ecosystem of content creators and users across the world who can collaborate to address the 'book famine' that exists globally for multilingual children's books.

Beneficiaries speak

"I enjoyed reading all the stories because all the pictures are good and later I was able to see the others. I saw them all from my own pen-drive with my friends."

**Rima Hansda, Age 12,
Birbhum(West Bengal)**

"Story Weaver is so easy to use both for reading and writing purpose that even a seven year old child can try their hand at creativity both in terms of writing and illustrations. Most of the stories are based on learning concepts be it moral, social or scientific in nature and children can be taught various concepts through these stories without being too preachy. A fun platform for both reader and writer."

Vibha Lohani, writer

MILESTONES- Pratham

January 1, 2004:
Pratham Books registered as a Trust, 38 titles published in the first year

2006: Pratham Books launches story cards (mini story-books)

2008:
Pratham Books adopts Creative Commons licensing model as a pilot

2010:
Launch of Library in a Classroom Kit

2012:
International Literacy Day sees launch of Pratham Books 'One Day One Story' initiative, a nationwide event that uses volunteers to take stories to children

2013:
Pratham Books is a finalist for the Google Impact Challenge

June 2015:
Launch of Donate-a-book (www.donateabook.org.in) a crowd-funding platform that enables non-profits and schools to raise funds for books to help India's children read.

MILESTONES- Storyweaver

September 2015:
Launch of StoryWeaver (www.storyweaver.org.in) on International Literacy Day

January 2016:
100,000 reads on the platform, just 4 months after launch

February 2016:
Weave-a-Story campaign concludes and results in the creation of 100 community translated stories for children

March 2016:
Create 20 digital first STEM books to fill the gap for good quality STEM related content for children

September 2016:
Freedom to Read campaign launched: pledged to add stories in 15 new languages in 6 months

October 2016:
Spotathon: A campaign to crowdsource illustrations to create a spotting book for children

February 2017:
Freedom to Read campaign ends with stories in 13 new languages added to StoryWeaver

Primary and Secondary Education

Briefs of 2016-2017 innovators

1. Avanti Fellows

Avanti Fellows

Rural education remains a critical need area in this country. Bringing quality education to these remote locations remains a challenge given that rural schools face a number of limitations such as poor infrastructure, financial resources and a shortage of teachers. India has a current shortfall of over 1.5 million teachers. This means that in many government schools students from multiple grade levels are taught in one class.

Avanti Fellows has implanted a unique pedagogy in partnership with government schools where the organisation screens pre-recorded lessons and lectures from best in class teachers from external institutions in an effort to enhance learning and bring quality teaching to underserved students. Till date they have been able to reach over 2,000 students, while placing 102 into top engineering colleges across the country.

2. CLT India

CLTe-Patashale

Though India is home to the largest percentage of both engineering and medical graduates, STEM education, which lays the foundation for either of these professional courses, remains a serious area of concern. Presently there exists a critical dearth of good quality content for these subjects as well as a shortfall of qualified teachers to teach them. This holds more truth when we consider STEM education in government schools or schools for the underprivileged section of society.

With over 2 decades in the space of education, CLT has designed a digital curriculum to enhance the classroom environment and improve the learning outcomes of students in STEM subjects. Currently, this STEM content is designed for students for Grades V to X. The content is also used for teacher mediation through media like televisions, projectors, tablets and even phones, and is available in English, Hindi and Kannada. E- Patashale is aligned to the NCERT curriculum, which closely matches all state board curricula.

The program has been running for over a decade directly impacting over 50,000 students and teachers.

3. Katha

I Love Reading!

The 2011 Annual Status of Education Report (ASER), states that nearly 97% of children, 6-14 years, are enrolled in school, but 65% of Grade III students cannot read a Grade I level textbook - a number that has increased by 10% in the last three years. To further exacerbate the problem, the poor quality of teaching in underserved schools has failed to build the necessary academic and life skills required by students.

Padhopyarse is an initiative run by Katha which aims to enhance the teaching learning process by enabling rural teachers through the use of SMOOCS (small open online resources) These SMOOCS are made available in a repository created by Katha. The online repository also includes Katha e-books, lesson plans and ready to use teaching material ie: games, worksheets, flashcards all of which is available in Hindi for easy use. The initiative takes its impetus

from the crucible of Kathas creative practice, Katha Lab School. By aiding the teaching process, the organisation has encouraged teachers to build in innovative, interactive methods into classroom activities, which enhance the learning process of students, and ensure long-term retention. At present the program is being run in MCD schools in Delhi and has impacted over 5,000 teachers. However, Katha has estimated that in the next 3 years it has the ability to reach a lakh of teachers across 5 states and 3 million children.

4. Million Sparks Foundation

ChalkLit

The Indian education system suffers from a number of shortcomings such as a lack of infrastructure, limited girl child enrolment, student retention and many more. However, the most perilous of these is the dearth of skilled teachers within the system. Teachers are central to the education ecosystem as they directly affect the learning outcomes of children. Budget private schools and Government schools in India have limited budgets, infrastructure and resources available to them that withhold them from exposing their teachers to regular training programs.

With the vision to impact over 1 million teachers Million Sparks Foundation has developed ChalkLit, a mobile based training platform aimed at building the capacity of teachers in low cost private schools. The platform houses a curated curriculum based educational resources that teachers can use to gain a sufficient understanding on topics so much so that they are able to conduct a successful class. ChalkLit, also available on the web, has been developed in partnership with EduPosse.

5. i-Saksham Education and Learning Foundation

i-Saksham

Pre-existing supplementary education centres or government schools in villages have ensured access to education, but failed to ensure quality learning

outcomes. This is because learning remains largely rote based, with little focus on enhancing the conceptual and theoretical understanding of students. Furthermore, there is little attention paid to creating context specific and relevant content for rural and tribal youth across India since they are not looked at as a profitable market.

i-Saksham is making learning accessible, affordable, efficient and engaging through use of pedagogy techniques and digital technology. At the time of induction into its flagship program, a baseline study is conducted for each student identifying their need areas and learning gaps. They are then given low cost android tablets pre-loaded with primary education content, competitive exams and information on vital Government schemes. The tablet gives them corresponding individualised action plans and allows teachers to track their progress. Further to this, subject matter experts are invited to hold workshops for rural tutors where they discuss the best in class teaching methodologies of today. The initiative has been implemented in Naxal affected areas in Bihar, reaching over 300 children.

6. ELNA

eShikshaChaupal

The Indian Education system still uses a number of age-old teaching methods which were once effective, when education meant only amassing knowledge. Today however, education has gone through a 360 degree transformation, where the focus is on real world application and critical analysis. It is clear that India still has a long way to go. One method of driving change is targeting strategic interventions at teachers, since they are the primary vehicles of change within the sector. Good teaching, results in better learning.

The eShikshaChaupal developed by ELNA is one such intervention aiming to drive change. eShikshaChaupal is an online platform that gives teachers free access to an online community, developed especially for teacher's pan India and integrated with a paid e-tool called myEplan. myEplan

helps users to identify, list and successfully execute their learning objectives as it acts as a step by step guide to designing and implementing their very own lesson plans.

The use of this tool is also accompanied with a training program that will guide the teachers on how to understand the nuances of integrating life skills and higher order thinking skills with everyday lesson planning. Still in it's nascent stage, the solution aims at building a community of over a million teachers pan India.

7. Eckovation Solutions Pvt Ltd

Eckovation

Very often the role parents play within the education system is largely overlooked. Parental involvement in their child's education can vastly improve learning outcomes and growth. Recent statistics suggest that only 15-20% of parents attend parent teachers meetings, and additionally, many schools for low income students don't hold meetings with parents.

Ekovation, is an android mobile application that provides parents a tool to monitor and gain visibility into the academic progress of their school going children. Through forming closed private groups on the app, teachers can communicate with parents, informing them on their child's progress, attendance, school announcements and much more. Communication can be in the form of text, audio or video, in real time. The organisation estimates the app will impact over 100 million users in the coming future

3. WeMakeScholars Edtech Pvt. Ltd.

Connecting Scholarship opportunities to aspiring

Every year billions of dollars are provided as funding by education ministries from various countries, universities, MNCs, trusts/foundations, and individual philanthropists to students as scholarships. Unfortunately many a time this information

does not reach it's intended beneficiaries, with many students in need missing out on such opportunities and hence not pursuing higher education. An online survey conducted by the organisation showed that over 83% of students were not aware of available scholarship opportunities or how to apply for them.

For this reason, the organisation has developed a robust online search engine for scholarships. The search engine has data of more than 18000 scholarships curated from universities, governments/ ministries, corporates, trusts and foundation websites. Data of these scholarships is gathered with crawlers, which source data from relevant websites. The team also collects data from offline sources such as newspapers and radios. In fact in the last one year, they directly helped more than 10 lakh students from 225 countries to find scholarships through the online portal.

Livelihood and Agriculture



Lighting up the lives of all



h2e Power Systems Pvt. Ltd
BJUrja

Deepavali, the festival of lights, is celebrated across India with joyous celebrations. A multitude of earthen lamps and electric illuminations light up homes as friends and families come together to rejoice.

In 2009, when Siddharth R Mayur rang his grandmother, who lives in his ancestral village to exchange greetings, he came to realise that she was celebrating the festival of lights without any electricity. She was sitting in absolute darkness.

This troubled him deeply. As a grandson living far away, he felt utterly helpless.. Troubled deeply by this, he began to question the larger picture and was confronted with a rather disheartening reality- The majority of the Indian population living in the rural areas faced an unreliable power supply that left them struggling with repeated blackouts. He believed that people deserved a 24/7 clean, green, reliable, and affordable power solution.

His search for a research and development partner to achieve his vision took him and his founding associate, Amarnath Chakradeo, to Fraunhofer Institute for Ceramic Technologies and Systems in Dresden, Germany (Fraunhofer IKTS) -one of the world's leading applied research institutes for fuel cells.

They acquired the commercialization and production rights of the technology created by Fraunhofer and together they set up H2e Power Systems Pvt. Ltd. in 2013. Amarnath Chakradeo designed the core

structure and approach of BJUrja as a solar and fuel cell hybrid system.

BJUrja **SOFC- Solar PV portable co-generated power system**

The heart of this Fuel Cell Power Pack System (FCPPS) is a 250kw Solid Oxide Fuel Cell that is trailer mounted along with solar PV panels, and a storage system. This is supported with a specially



BJUrja is h2e's initiative to 'Be the Change' for the small farmers. A system that has the potential to bring about the First Green Energy revolution in the farm sector".

Siddharth R Mayur, Founder & CEO, h2e Power Systems Pvt Ltd

designed set up of 3 LPG cylinders with a GSM interphase. A common power bus connects them all to provide a seamless and no-frills power supply to the end user. An android based user interface is being developed for the entire system and its monitoring, including the LPG cylinders. The system will have a pre-installed solar pump for irrigation purposes. This energy independence enables the discerning farmer to tow BJUrja with a tractor (or a cattle cart) to any desired point of application.

A Smart Energy Management System (SEMS) that maximises efficiency manages BJUrja's entire architecture. The SEMS is a single microcontroller based control system for the entire unit. During the non-availability of Solar PV or battery discharge, the SEMS will switch on the fuel cell system and maintain adequate power output.

BJUrja is designed to operate as a load following system for its lifetime. LPG cylinders will be monitoring pressure sensors and the cloud based predictive maintenance features will inform the team of remote diagnosis thus avoiding any damage or system failure. When the cylinders are below 20% capacity the load cells trigger a signal, which is relayed to the farmer via an SMS. The farmer can then request for a refill/ replacement of the cylinders.

BJUrja combines multiple clean energy technologies on a single platform. The farmer can choose conventional fuels like Natural Gas/LPG or even alternative cleaner fuels like Biogas, Hydrogen or Bio-CNG with options for Diesel and Bio-Diesel in future.

All bio-fuel or waste to energy projects can benefit through state and central government capital subsidies, and with other benefits such as special buy-back rate by state utilities. h2e is in talks with Ministry of New and Renewable Energy (MNRE) and government officials as they plan to work closely with NABARD.

Primary applications and tasks

- The farmer can run the water pumps and drip irrigation system on a plug and play basis. The system with the current configuration can be used to irrigate around 6 acres of farmland with Jain irrigation supported Drip irrigation system through a 2 hp or a 4 hp pump.
- Farmers can add capacity and run their harvesters and rotavators on the farm. Thus converting their farms into factories.
- The farmer can have multiple BJUrja units to set up his own storage facility wherein he will be able to increase the shelf life of his produce and serve the market when needed.
- He can carry the system home and power his house and use it for running critical devices.
- Dairy industries have a large requirement of electrical energy for operation of machineries along with thermal energy for processes such as pasteurisation. A larger capacity SOFC technology (industrial scale, e.g. 5kW to 100kW) can be installed and coupled with larger capacity solar PV arrays and/or wind modules for applications in dairy industry.
- Most dairy plants generate a large amount of biodegradable waste. Coupled with the sludge from ETPs, this waste has good calorific value and can be used to generate biogas that can be used in BJUrja's system for power generation.
- Shops, groceries, micro-dairies and those requiring refrigeration solutions can undertake handling of perishable goods with a long-term business plan.
- It is scalable from its current 250W fuel cell and 600W solar form to a higher 500W - 1 kW fuel cell and corresponding solar configuration.

Long term goals

H2e Power Systems is planning:

- To incorporate automation and take the solution to a mobile platform.
- To use IoT solutions to go beyond energy production and help the farmer with multiple tasks.
- To be a part of Government of India's solar pump initiatives.
- To install BJUrja systems in farms run by agricultural colleges in collaboration with department of Agriculture.
- Looking to work with NABARD with support from MNRE and Maharashtra government in the initial stages.
- To replace the 700,000 diesel pumps those are bought every year (as per MNRE estimates).
- To provide energy independence to farmers and small business owners.
- To propose bigger configuration with 2X250W SOFC system that can be integrated with 1kW systems in the future.

Beneficiaries speak

"BJUrja is a step forward in empowering the agriculture sector, especially the farmer, by empowering him with energy. It is an energy solution on wheels, which will give the farmer the independence to power his farm and also use the power in his home. He can also rent the system to create additional income source.

We at Jain Irrigation are supportive of this idea and are looking forward to anchor this product by integrating BJUrja with our drip systems".

Ashok B Jain, Chairman, Jain Irrigation Systems Ltd

MILESTONES

**2013 -
H2e Power
Systems Pvt.
Ltd founded**

**Development
of SOFC and
National
Fuel Cell
Supply Chain,
2013-Present**

**2015 -
First organisation
in India to develop
a micro-CHP
SOFC system and
manufacture fuel cells**

**2015 -Operational
SOFC prototype
ready in Pune**

**2015 -
Working
directly on
renewable
fuels such
as BIO-CNG,
Biogas and
Hydrogen**

**2016 -
Successful first
field trials and
product validation
at Jain Irrigation**

**A multi-fuel
reformer has
been developed
than works on
gaseous fuels The
new reformer will
work on liquid
fuels as well -
Development
underway**

Farming through sustainable technology



Jayalaxmi agotech Pvt Ltd
ICT solutions for farmers in regional language

Anand Babu grew up listening to the murmurings of the soil his family had tilled for generations. His relationship with the drought ridden rich black soil of semi-arid Hagaribommanahalli in Bellary district had been quite tumultuous. Having witnessed his parents' farming struggles, he decided to migrate to the city and look for a corporate job, instead of force-fitting himself to a life of low-profitability and farming uncertainties.

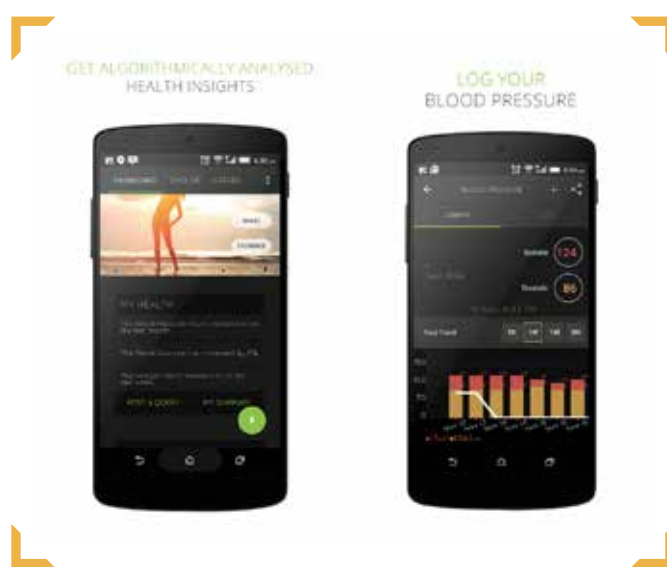
Meanwhile in a village nearby, Shivaprakash L, an industrious farmer, was trying new modern farming practices to bring about a change in the local agri-scape. Unfortunately for him, all roads led to huge losses and he lost his status within the village. Unavailability of timely guidance coupled with alienation of the youth from traditional farming practices took its toll. Just like Anand, Shiva decided to give it all up and move to the city.

Anand Babu pursued his masters in Biotechnology & Bioinformatics and followed it up with a management degree from IIM Bangalore with specialization in Analytics. He was hired by IT giants like Accenture, Cognizant, Wipro to work in India as well as the US. Life took an upward swing for Shivaprakash too. He finished his engineering degree and worked in IT industries, including a short stint in Africa.

Even with success, the two entrepreneurs were troubled by the anguish of being separated from their rural homelands. They wanted to give up their six figure MNC jobs and move back to the domain of pure agriculture in their village.

They came together in 2013 and kick-started a venture named Jayalaxmi Agrotech Pvt. Ltd. in 2014, to provide agronomic advisory support from planting to harvesting in the form of ICT based mobile apps.

This was their first step towards helping the farmers break the literacy barrier by using technology as an enabler to address pressing agricultural problems.



"App stores have become an ocean of apps. Although internet penetration is growing even in the rural area, farmers would not be able to get the app of his interest in one click. It is going to be more and more confusing. Our AgriPole eases this challenge"

**Anand Babu, Founder,
Jayalaxmi Agrotech Pvt Ltd**

Crop specific mobile apps in regional languages

Information gaps among the farmers is a major social problem that arises from illiteracy and diversity. Despite government's extension departments, there is an acute shortage of qualified agricultural experts who can handhold the farmers on ground. Jayalaxmi Agrotech has developed a suite of 25+ crop specific mobile apps in regional languages to bridge this divide in information.

The apps are designed to work without internet (if required) as only 4.4% of rural India has internet connectivity. For this purpose, a hardware device named 'AgriPole' has been developed to disseminate the content. These apps give end to end information about each crop from sowing to harvesting, through audio-visual content. The usage patterns of the apps are tracked and the information is pushed to cloud based servers through SMS in the absence of internet. The analytics are provided as a service to specific customer segments.

This 3 tiered ICT solution - of Android Mobile Apps, AgriPole device - built on Intel architecture and Analytics platform built on cloud using cloud servers - has a huge potential to help farmers make independent decisions. Copious data on valuable traditional farming methodologies has been collated to reduce the need for chemical intervention when not needed. This helps in reducing the carbon footprint

Important In-App features

- GUI interphase for ease of use
- Crop specific audio visual content support multiple language
- Irrigation and fertigation reminders
- Information on varieties and their fitments
- Guide for responsible use of growth hormones, fertilizers and pesticides on plants
- Steps for disease management
- Lot of emphasis on organic farming, bio-control agents
- Education to farmers on traditional and cultural aspects of farming
- Information on goat, sheep and dairy farming
- Vaccination reminders for livestock
- Decision support system for farmers
- Pricing analytics and break even analysis
- On demand weather reports

"Through our innovative ICT solutions, we tried to demonstrate that some of the social challenges in agriculture can be solved, and at the same time, creates economic and social benefits".

**Shivaprakash L, Co-Founder,
Jayalaxmi Agrotech Pvt Ltd**

MILESTONES

2012:
Ideation and concept

2013:
Anand Babu, Founder & Director and Shivaprakash L, Co-founder & COO started the R&D process

2013:
First App on Sugarcane crop was ready

September 2014:
NABARD supports technology adoption to 4000 farmers

November 2014:
Won mBillionth award from DEF

2014:
Won "Mobile for Social Good" award from Vodafone Foundation

April 2015:
40,000 app downloads

May 2015:
Incubated at CIIE for IDFC challenge

November 2015:
Developed 'AgriPole' device during incubation at CIIE

December 2015:
Received first order for 100 AgriPole devices

January 2016:
Featured in Fortune magazine as 'Fortune 40 under 40'

Jan 2016:
Launched agri e-commerce platform

January 2017:
Download speed touched one farmer every 3rd minute

February 2017:
Winner of "Millennium alliance" round 4

Challenges, Risks & Mitigation

Scaling is the biggest hurdle as healthy collaborations are far and few to come by. However, Jayalaxmi Agrotech has found a way forward with some successful partnerships. Their association with SKDRDP, Deshpande Foundation has taken their app to the grassroot level.

Most of the existing ICT solutions in the agricultural space focus on weather and market prices. They are internet dependent and have a centralized approach. This has formed a pre-conceived notion about the apps. To educate the farmers about crop specific offline apps, one has to put in extra effort with roadshows and rural campaigns.

An alliance with government networks will have a far reaching impact but it takes time to make inroads into the state machinery. Jayalaxmi Agrotech is looking at letting the government agencies use their platform for the following:

- Extension activities
- To use the insights for policy making
- Use analytical outputs as ancillary data to make crop import/export decisions
- Disseminate scheme related information

Impact

- 1,40,000 farmers downloaded apps till date.
- Survey and analysis on farmers' knowledge gain by comparing "pre and post exposure to apps" shows 46% improvement in knowledge gain.
- The apps have helped save 50,000 tons of chemical fertilizer usage.
- The apps have reduced the input costs by 14% and increased profitability by 17% for farmers.

Long term goals

- Apps have been developed for over 20 crops in four regional languages. Content and software is being developed in more languages with very less lead time.
- The apps to be downloaded every minute in the coming years.

- They are hoping to reach at least 5 lakh farmers in the next 5 years.
- 'Field to Lab' analytics data services will emerge as a sustainable business model to integrate agri e-commerce needs.
- Focus on developing fertilizer and PPM calculator.
- Over time, touch lives of one million farmers through multiplier effect over time.
- Chance advocacy with government stakeholders.
- The application users are based in the state of Karnataka, Maharashtra and Andhra Pradesh in India. Apart from India, they are also being used in Ghana. Looking to expand to next 3 states soon.

Beneficiaries speak

"Until I used these agri apps, I was not aware of the existence of drought resistant rice varieties which were developed a decade ago!!!!"

Kotresh D - Farmer from Davangari District

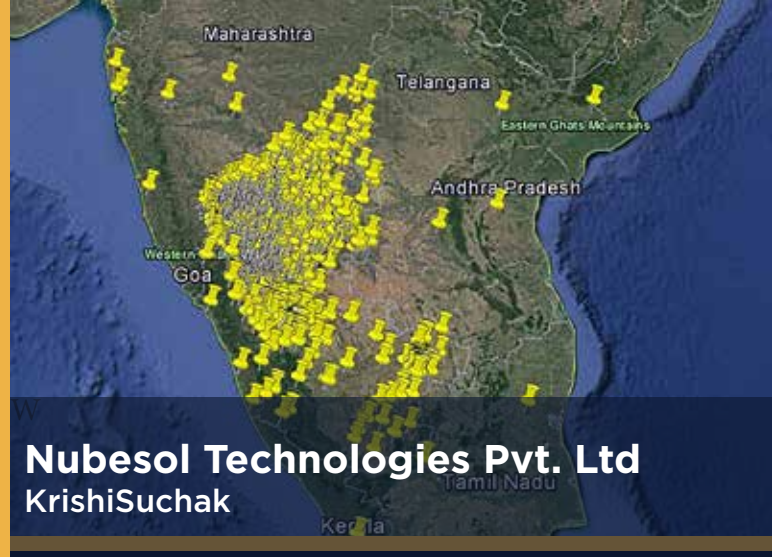
"With the use of Jayalaxmi Agrotech apps, I was able to reduce my input cost in farming".

Manukumar - Bellary (Dt)

"SKDRDP partnered with Jayalaxmi Agrotech to bring the social transformation through ICT solutions. Pilot results in selected 5 districts are very encouraging".

Mr Manoj Masis - Agri Division SKDRDP

A new world for the farming community



Nubesol Technologies Pvt. Ltd
KrishiSuchak

With India still remaining an agrarian based economy, the farming community remains a key contributor towards India's growth story. However, even with their notable contribution and unique positioning, they are a downtrodden and disempowered section of society. As the world pursues capitalistic ambitions, the farming community is increasingly being left in the shadows facing exploitation at the hands of corporates who are guzzling agricultural land, middle men who extort money and fewer government policies to protect them.

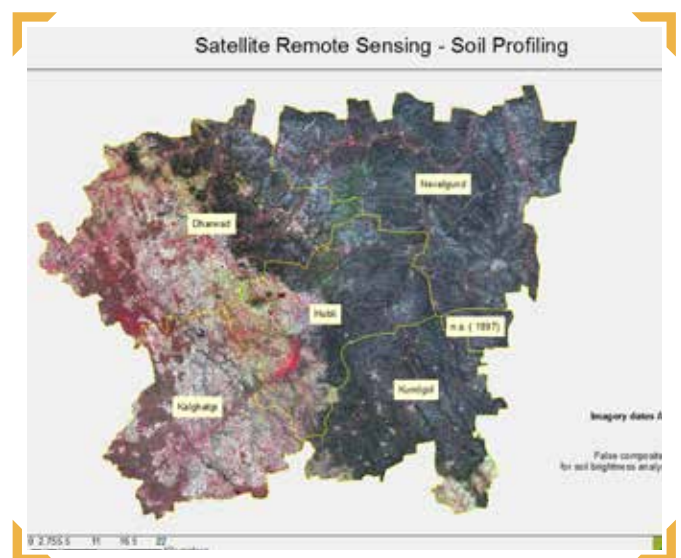
What's more is that with an exponential growth in population, food scarcity has never posed a more real threat. This has led to the adoption of unsustainable and chemical intensive farming practices that help increase yield. These practices are so common that farmers no longer remember sustainable and good farming practices and because many remain illiterate and poor, they do not have access to the education and information required to learn otherwise.

If farmers sat in the seat of power, they would be making laws that were beneficial to the greater good of the land. But the world isn't designed to be like that. So the farmer takes his commands from the sun, the rain and the soil.

Suraj Dixit, an Electrical and Electronics Engineer, stumbled upon this information deficit in the sector by chance, when he and his father chartered the unknown territories of weekend farming due to their love of agriculture. They tried to experiment with sugarcane and banana

plantations, both which proved to be failed ventures. But with their hearts set on rice cultivation they persevered. They did not have any prior expertise in growing paddy so they struggled at every step. As novices they did not have the knowledge and expertise needed to succeed and therefore suffered a 40% loss on all investments of money and time, leaving Suraj disheartened.

Unlike others though, Suraj took a truly entrepreneurial approach to the experience



"We are moving into an age of Data driven Innovation's in Agriculture and we are excited about our technology providing a platform for the same, which can make a significant impact to the individual farmers as well as to the Industry. We are excited about the curiosity shown by the farmers and their willingness to interact with us and to resolve their problems, making difference to their profitability"

Founder

by turning failure into opportunity. He analysed the situation and realised that the lack of proper alliances and absence of timely expert advice had caused him this great loss. The problems were identified as:

- Lack of on ground farm extension services
- Lack of collaboration medium to connect farmers
- Loose linkages to the market, controlled by only few individuals

His weekend farming gave way to bigger and more ambitious plans. He decided to build a platform that would be a collaborative support for the farmers every step of the way.

He founded Nubesol Technologies Pvt. Ltd. in 2013. Suraj had worked with reputed Multinationals like IBM, GE and British Telecom before he started this venture. He put to use his 16 years of IT experience with designing systems, enterprises and Ssolution architecture. Assembling a passionate team of individuals Suraj set a clear vision for his brain child - *'if the land is capable of producing a certain amount of produce and falls short, then it's a national waste'*. With this as his foundation, he hoped to make a substantive difference in lives of farmers across India.

Krishisuchak - The personalised chat-based agri app

Krishisuchak is a simple chat based communication platform between farmers and agriculture experts to exchange information using text messages, photos, voice messages and videos. It is a smartphone based free Android App.

The farmers from any place can ask for help or solutions regarding weather, market prices, cultivation methods for crops and a host of other agricultural issues, which will be answered within 4 hours of raising their query. Other more complex problems will be answered within the next 24 hours. The area of expertise currently provided includes:

- Pest and disease management
- Nutrient management
- Crop care alerts
- Market intelligence services
- Expert advisory (Anytime, Anywhere, Anything)
- E-commerce buying/selling for better negotiation for the farmer
- Grievances and redressals

This app is available in three languages - English, Kannada and Hindi. The technology platform is built grounds up. The technology stack is completely built by the KrishiSuchak team and has no other technology partner at the moment. It involves:

- Cloud computing
- Advanced image processing
- Artificial Intelligence
- Data analytics, Mobility (Android for now)
- GIS and remote sensing.

With the vision of 'putting food first' every farmer is able to address their queries through this app.

Nubesol ensures that every farmer receives information tailored to his/her needs. They get services such as:

- One to one contextualised attention and redressal
- Timely resolution to their queries
- Convenient and easy to use interface: just three buttons are required to use the app to register query
- Content and communication only on demand by the farmer (except proactive interventions like weather, crop care alerts etc.) to ensure limited mobile data usage
- The entire ecosystem on their fingertips: Farm, advisory, agricultural universities, farmer producing organisations, soil testing labs, consultants etc.
- Home and kitchen garden services

Key features of the app

Remote sensing, acreage and yield predication is a unique service provided by the App. Remote sensing technology and Kirishisuchak system enables farmers to quickly draw and plot their land using underlying Google maps capability. Once that is done, the app provides data on the crop health and yield for the area outlined on the map. Nubesol's proprietary algorithms are used to analyse growth indexes and understand the health of the crop specific to the age. The farmer is then informed about the yield potential and the potential intervention he can make to get a profitable harvest.

Individual farmers as well as bigger agri market players can benefit from this. Krishisuchak's advanced data analytics and CRM modules of companies can get more detailed and specific insights for ground level information.

Impact

On boarding new farmers is a challenging task. The organisation has realised that to scale the application, they must first gain the trust of farmers. Therefore, structured support and tailored outreach are provided to the beneficiaries over an extended period in hopes to increase usage. The results are showing and are hugely positive:

- Krishisuchak has been a great success at the Krishi Melas at local levels.
- There are about 2000 Farmer Producing Organisations (FPOs) with 5000+ members each. Working with them closely is creating an active ever-increasing network of app users.
- Nurseries, soil testing labs and irrigation consultants have also shown a lot of

interest in propagating the presence of Krishisuchak.

Long term goals

- Ensure Krishisuchak's presence in all Indian states.
- Get at least one million farmers on the platform.
- Enhance the services to make it the First Point of Contact for all farmers.
- Reduce input cost to the farmer by an average of 15% with Nutrient Management Suggestions.
- Increase yield by at least 20% with Appropriate Nutrition, Remote Sensed Yield Maps, Pest & Disease Management and Crop Care Alerts.
- Create more digital content in the next 2 years.
- Partner with Farmer Producer organisation's to provide farm extension and digital connect services.
- Partner with government bodies to enhance and enrich the existing farm extension services for larger reach.
- Concentrate on customer acquisition, service innovation, and expansion.

Beneficiaries speak

"Connecting with KrishiSuchak we understood our lands are potassium rich, good for horticulture crops. hence learnt Papaya Cultivation through this app, They are guiding us through every step and connecting us to the markets with right inputs. We were traditionally growing Sugarcane getting around 80K per acre, with this now expecting to bag in at least 6 Lakhs rupees per acre."

**Farmer: Basappa Girgawi,
Jamakhandi Taluk, Karnataka.**

MILESTONES

2013:
Nubesol
Technologies Pvt.
Ltd. registered

**September 24th,
2016:**
Krishisuchak App
launched

**1500 downloads
and over 500
queries in first 3
days of launch**

**5th January
2017:** App
introduced in
Hindi, apart from
the Kannada
and English

**5000+ farmers
currently using
the App**

Livelihood and Agriculture

Briefs of 2016-2017 innovators

1. Gamatics India Pvt Ltd

Spardha

India is not ranked highly in the sporting world when compared to other countries, with performance by athletes remaining poor. In the recent Rio Olympics, India measured up relatively low in the number of medals won, coming in 67th not just against USA and the UK but also against other lesser developed nations like China and Brazil. This has mainly been due to the fact that sports has not been made a priority in the national agenda with only 0.005 USD being devoted to sports per head per day. Apart from financial limitations, limited infrastructure and support given to budding sportsmen at the grassroot level has meant that many aspirational athletes do not ever make it to competing professionally.

Gamatics India an innovative social enterprise- one of the first movers in this area, is hoping to address some of these challenges. It has developed a web cum mobile platform aimed at empowering aspiring athletes. The platform hosts a number of features including- a listing of relevant sporting facilities and coaches associated, which helps both athletes and parents to take a data driven approach in choosing training facilities. It also has a listing of world-class training equipment that athletes can purchase easily and finally a list of scholarships and schemes that are available to sports persons in this country. The app also allows users to track their performance thereby identifying areas of improvement, towards which to target their training. The application is a game changer for aspiring sports persons across the country.

2. Kalavithi Art Ventures Pvt Ltd

Kalavithi

Many traditional art forms are quickly vanishing in India due to rapid globalisation with little documentation being done on them. It is worth noting that a majority of the artists responsible for creating these works belong to tribal communities who more often than not are economically marginalised. The decreased demand for their arts and crafts has only reinforced a cycle of poverty for these communities.

Kalavithi is an online market place for ethnic and traditional art works. The platform hopes to reignite the demand for traditional art by giving local artists a voice and easy access to a market where they can sell their work, therefore creating a sustained form of livelihood for such artisan communities. The platform currently hosts 25 artists, but has a goal to reach 150 in the coming year. Since it is an online website, it draws interest from art enthusiasts from across the world.

3. Rural Odyssey Pvt Ltd

Rural Odyssey

The shift from an agrarian based economy to that of a goods and services based economy has meant that cities have become the focal point of economic activity. One of the biggest consequences of this rapid urbanisation has been the mass exodus of workforce from rural settings who have left their homes in search of better work. This has not only left many rural communities recoiling from a drain in capital but with a lack of sustainable livelihood opportunities for

those who have chosen to remain. Many a time these communities have a rich cultural heritage making them ideal tourist attractions.

Recognizing this potential and leveraging on it, Rural Odyssey has created a sustainable community driven tourism model that works to provide an alternative and viable source of livelihood to community members. As part of this initiative, the organisation trains members on how to set up and manage tourist guesthouses out of their own homes using basic amenities and services. To further increase efficiency, a mobile platform has been developed which allows customers to book stay and custom trips seamlessly as well as community members to manage reservations at the back end. The earnings from the guesthouses and other business resulting from tourism eg: trade of local arts and crafts, act as a source of income for these beneficiaries. The project aims to impact 10,000 people directly over the next 5 years while touching many more indirectly through the energizing the local economy.

4. Badiyajobs

Online recruitment solutions platform for entry level workforce

India is home to over 1 million qualified job seekers with 1 out of 8 people actively looking for employment. However employers have not been able to capture this potential successfully due to their inability to dedicate sufficient time and resources to recruitment. Furthermore, candidates frequently miss opportunities because job postings are not advertised widely and are available only on specific portals.

Badiyajobs has developed a job portal that allows job seekers to register, create profiles and view relevant job openings. At the time of registration, the portal assesses the candidate's communication skills including listening, vocabulary, fluency and pronunciation using machine learning. The scores of which are visible on the

candidates profile. At the employers end, recruiters are able to shortlist candidates based on specific job requirements using filters available on the portal. To scale further, the organisation has also introduced automated tele registration for those candidates who do not have access to the internet. Candidates can call in, register their details and have a profile made for them. The portal is also available on the web or as an android application. Currently operating in the Delhi NCR Region the highly scalable solution aims to reach over 80 million job seekers in the next 20 years.

5. Laqsh Job Skills Academy Pvt. Ltd.

PM skilling scheme

For many youth from economically weaker sections of society, learning the necessary skills to gain employment remains a difficult task. Simply because they cannot afford to enrol in higher education, avail of formal training or access relevant information. This greatly hinders their opportunities for work and hence their ability to improve their standard of living. To enhance the employability of these youth, Laqsh provides vocational training to students from class 10 to 12. The training comprises of a blend of the traditional classroom model of learning, face to face teaching and online learning. The online portal, which acts as both a teaching and learning aid, hosts curriculum aligned content for industry-focused courses such as banking, financial marketing and management, IT/ITeS and electrical technology. The content is available in the form of videos, texts and images, both in English and Hindi. The organisation is currently in the process of adding lectures by guest faculty who not only work to improve the quality of teaching and learning but also act as role models to the students. Presently, the model has been rolled out in 300 schools across 5 States in India and has impacted 10,000 youth so far.

6. ZeroMiles Integrated Development Services Pvt

ZeroMiles | creating smart villages through clean drinking water

India houses over 720 million mobile phone users with 320 million belonging to rural communities. Though the penetration of mobile technology has been relatively high, there still exists a large digital divide between urban and rural populations. This is mainly because a majority of the rural population does not know how to utilize existing ICT infrastructure effectively to enhance the transfer of knowledge and information.

ZeroMiles has set up rural entrepreneur led centres, where they run two main activities. Primarily the centre is responsible for the purification and distribution of ground water at very affordable prices to villagers. As a secondary activity the organisation selects and trains rural entrepreneurs who are stationed at the centre drawing upon it's activity to teach their local community on how to avail of digital services such as registering for a PAN Card, Aadhar and DTH recharge. The centre is equipped with basic ICT infrastructure to aid this process. The model currently operational in three villages in Maharashtra has touched over 800 people thus far.

7. Development Alternatives

TARA Akshar+

In spite of being one of the faster growing economies in the world, India houses the largest number of illiterate adults. Though the literacy rates have improved six fold since independence, over 26 per cent of its population remains illiterate. The problem of illiteracy has a negative impact on family planning and development outcomes. According to the National Census of 2011, India's adult literacy is about 74 percent, which is below the global average of 84 per cent. The condition of women is worse, with female literacy levels standing

at around 65 percent. This has serious implications on the status and role of women in society. To overcome this Development Alternatives has launched the TARA Akshar+ a program aimed at improving adult literacy amongst women. As part of the program the organisation has developed two softwares- TARA Akshar and TARA Ganit. The programs use advance memory learning techniques, graphics and testing systems to enhance the learning process of the beneficiaries. The target beneficiaries are Hindi speaking adult women who are taught in TARA Akshar + Centers for 98 hours over the course of 49 days, after which they are expected to be completely literate. Till date the TARA Akshar program has reached 1,830,000 beneficiaries directly and over 5 Lakh indirectly across districts in Uttar Pradesh, Rajasthan, Haryana, Madhya Pradesh and Uttarkhand.

8. FRIENDS UNION FOR ENERGIZING LIVES (FUEL)

Providing career counselling and career guidance support to over 9,00,000 children

India currently has the third largest higher education market after China and United States of America. Despite this, the rate of enrolment in higher education is only about 18 percent. This picture looks bleaker when the comparison is made between rural and urban areas. The reasons for this are highly complex. It has been observed that apart from poor access to higher educational institutions, financial constraints etc which hinder students from pursuing higher education, it is also a lack of guidance and knowledge on available courses that adversely impact students.

FUEL decided to tackle the issue by launching a number of programs that work towards providing career guidance, support and training for youth who would not otherwise have it. The first is Career EduConnect, which the organisation runs in partnership with government and low cost private schools. The program offers aptitude tests and career counselling to it's students, for a period of 6 months.

First students are put through rigorous aptitude and personality tests, the results of which are collected on a dashboard with an individual report being generated per student. These results are then used to personalise career counselling for both the student and their parents. As part of the program, students receive SMS alerts with information on job postings, scholarships and available vocational and high education courses and can avail of a 24-hour helpline to clarify any doubts they may have. The second program Ahead of Times (AoT) is a unique personality development program through which students are given 25 hours of training over 5 days with the aim of equipping participants with essential life skills for the future, such as leadership skills, communication skills, financial planning etc. - putting underprivileged students on par with their other more fortunate counterparts. Through these programs, the FUEL initiative has been able to impact over 9 Lakh students across 11 states in India.

designed HARC KISSAN a mobile platform with agricultural information customized to the needs of farmers in hill communities. The platform hosts information on specific mountain crop cultivation, soil management practices, weather updates and a repository of relevant government schemes that these farmers can avail off. All content is available in Hindi so that farmers can easily understand it. The application has the potential to reach crores of beneficiaries across the Himalayan states.

5. Himalayan Action Research Centre (HARC)

Techno-solutions for mountain farming

The Indian Himalayan region covers a vast geographic area of 5 lakh kms & spans across ten states of the country. The altitudinal characteristics of the geography have given it both rich biodiversity as well as a highly fragile ecosystem, making it inhospitable and hard to inhabit except to the few hill communities who have resided there for generations. These geo physical features have also defined livelihood opportunities in the region, with small-scale subsistence farming and horticulture being some of the main sources of income generation. Yet due to their remoteness, many farmers do not have the necessary access to relevant and best in class agricultural information.

Keeping this in mind, this Not for Profit has

Environment





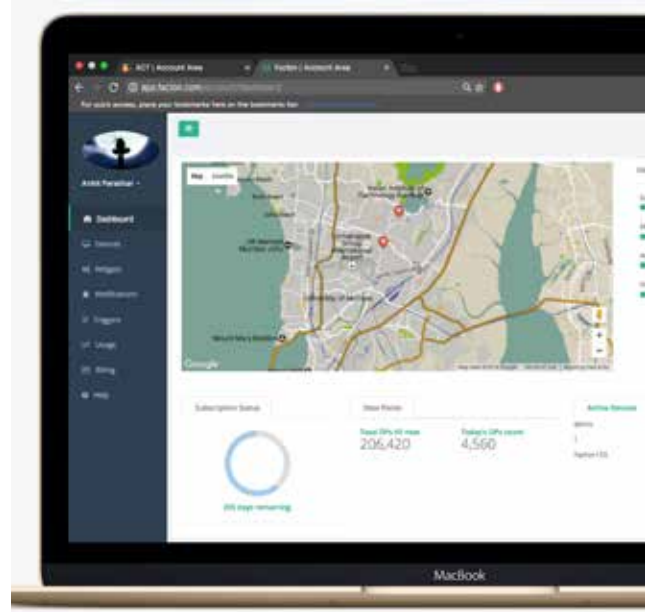
infrastructure which results in optimization and large scale water saving.

The innovation, still in its nascent stages, is aimed at driving efficiencies through the water distribution system ensuring minimum wastage and enabling better decision making regarding water allocation

Environment- Faclon Labs

There is acute water shortage in some parts of India. This is exacerbated when coupled with the inefficiencies in the current water distribution system. Problems such as water pilferage, mismanagement of water, poor water governance, lack of infrastructure and the manipulation of the system to benefit the wealthy has meant that the poorer and most needy sections of society have been excluded and unable to access enough water to meet their basic requirements. When the infrastructure does exist, field staff responsible for the efficient management of the system struggle to monitor usage patterns and ensure continuous availability.

Faclon Labs has therefore developed a solution aimed at monitoring and managing the water distribution system in a certain geography. Primarily the innovation is a hardware plug and play IoT remote sensing device enabled by Wi-Fi, Bluetooth or 2G/3G, which when installed throughout the water distribution system (eg: overhead tanks etc.) sends real time data back to a backend cloud server. Information includes data on leakages, over flows and other emergencies, which allow for quick decision making and action by governing authorities and decision makers. The back end web dashboard allows users to gauge insights into demand and supply trends and track operational status of



and management practices at the state level. The tool will also aid field staff, by easing their work and increasing accountability and transparency in their daily activities. The organisation plans to scale the innovation pan India in the coming years.

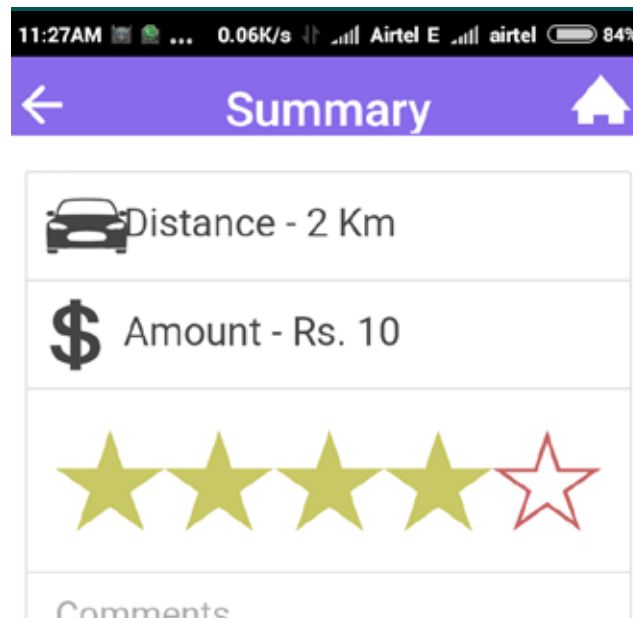


Environment- wizard pooling concepts pvt limited EzPool

At present, cities across India are bursting at their seams with many ranking as some of the most polluted cities in the world. A leading cause for this has been the increased number of vehicles that have drastically led to increased levels of air pollution and as well as the daily hassle of traffic jams. Many a time, these vehicles run empty only having one passenger, commuting to and from work. Public transport continues to remain unsafe and inaccessible for many- especially women. If these issues are to be tackled effectively, it is integral that we must promote the practice of carpooling. Though the recent introduction of cab services has encouraged the practice, there is still some way to go if we are to make any real progress towards reducing green house gas (GHG) Emissions and easing traffic congestion.

Wizard Pooling Concepts is one of the first organisations in India, actively trying to change commuter behaviour, by making carpooling accessible and fun through their mobile application, EzPool. EzPool is a solution aimed at helping corporate sector employees travelling in the same direction to carpool. Users are required to register their vehicle number and insurance

as a 'ride giver' or book a seat in a private car as a 'ride taker.' The app captures seat availability and the model allows both passengers and drivers to earn points or go through a standard method of payment. The solution works to reduce the number of vehicles and therefore the amount of pollution.



The organisation aims to create substantial impact to the corporate sector across the country estimating that they will be able to reach over 12 Lakh people in each city per year.



Other

Social Issues





Shelter Associates

Approximately 80 million people living in urban slums, do not have access to safe toilets. Recent figures suggest that over 564 million people defecate in the open, which is nearly half of the country's population. Open defecation poses wide-scale health, environment and personal safety risks, particularly for women and children. The government's Swachh Bharat Scheme which aims to end open defecation by 2019 by undertaking the large scale construction of toilets across the length and breadth of our country, though having made some credible efforts, there is still some way to go if we are to reach this goal. There is a crucial need for increased collaboration with citizen led projects if good sanitation practices are to be adopted by the masses.

To this end, Shelter Associates has created an end to end urban sanitation software solution. The solution aims at using data driven technology to impact long term sustained behaviour change. On one end the solution starts with a data driven city wide GIS mapping of sanitation infrastructure in slums. Household and Individual level surveys are conducted to collect data, analyze and target specific crucial needs. On the other end the organization uses the data collected to work closely with municipal corporations, infrastructure providers and NGO's to

ensure construction of sanitation units and sewerage systems. The organization has started using tablets to collect and input data in to their web platform. The organization also runs awareness workshops and drives in the slums they work in to educate individuals on the importance of effective sanitation.



Till date, Shelter Associates have mapped 500 slums over 4 cities and have impacted over 50,000 people directly. They have also constructed over 6,000 individual toilets and have the potential to impact a population of 2.5 million.



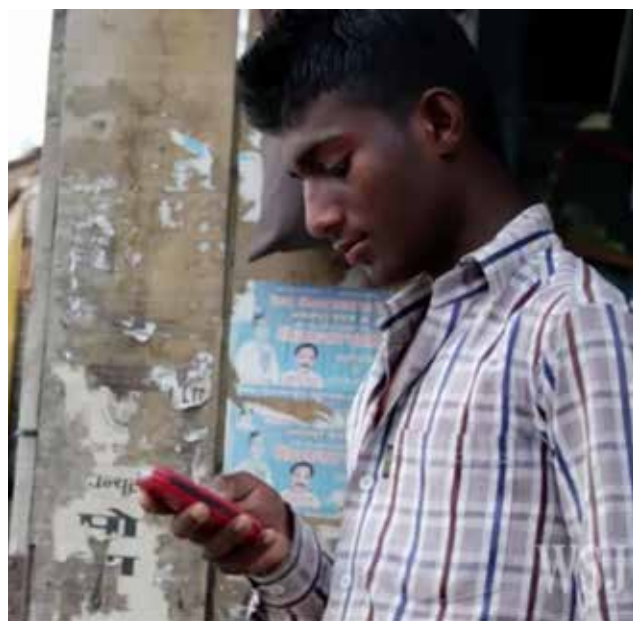
Grameen Foundation

In the struggle towards poverty eradication and the development of the bottom of the pyramid population, the topic of financial inclusion has emerged as a critical prerequisite. A staggering 41% of India's population remains unbanked, with over 60% of that residing in rural areas. Institutional research and empirical studies show, the main reasons for such drastic figures are - lack of opportunities for the poor to access financial institutions and financial opportunities, financial illiteracy, apathy on the parts of banks, high interest and lending rates- all of which not only hinder financial inclusion, but drive the rural poor to borrow from informal money lenders and middle men at exorbitant rates. The problem is even more acute for women in these communities, as the women are traditionally excluded from economic activity and decision-making.

Grameen Foundation aims at increasing financial inclusion and financial capabilities of the poor by developing programs that give them access to financial services and develop knowledge on the need for financial management. To this end, the organization works with a mobile money provider and a local microfinance institution, Sonata, to deliver mobile banking services and financial education to the MFI's women borrowers in Uttar Pradesh. The aim of the project is to get

the women borrowers to use mobiles as a tool for loan repayment.

As of May 2016, the program has reached out to over 23,222 clients training them on mobile financial services; more than 7050 have made at least one repayment using DFS. The payment option has been



introduced at over 12 branches at Sonata. As of August 2016, transactions worth INR 1.6 crore have been routed through Oxigen.



Peoples' Science Institute

GIS based application for development vulnerability index at village level

Rural developmental planning in India is often done at a macro level. Though the primary unit of planning is a village, planning is restricted to the state and district level. Furthermore, socioeconomic indicators such as health, population, education data, which are crucial for planning, are usually outdated. National studies take years to complete and often do not cover the entire population and geography of the country leading to gaps in data. Where data does exist, it only exists at the district or state level and not for villages. This has led to planning at the village level being largely overlooked resulting in a depreciating standard of living for those living in these rural communities.

Peoples Science Institute have been one of the first movers in the space, who have been working to find an effective solution and address village level planning concerns. To enable their efforts, they have developed a GIS based system for the village level – Village Information System (VIS). The solution is primarily a user-friendly, geo referenced software application that displays national data eg: population census Health Survey, Agricultural Statistics and much more

for villages across Uttarkhand, Himachal Pradesh and Haryana.

In addition to this, the organization also developed for those same villages, a Vulnerability Index. Which maps information on percentage of ST/SC's, female population, marginal workers,



unemployed etc. The visual maps of Vulnerability index indicate the most backward clusters in terms of overall economic development.

The project has been running since 2011 across Uttarkhand, Himachal Pradesh and Bundelkhand. The GIS and VIS modelling solutions have been used by various departments, agencies and researchers to identify the most critical developmental gaps in these States which has enabled them to take more informed decisions and create more targeted interventions so as to improve the standard of living conditions for over 30,000 households till date.

NASSCOM Social Innovation Forum, 2016-17 – Contact details of Innovators

1. Vision Aid

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Jury Insights



Ashish Garg,
Founder/CEO-
Discover Tomorrow

The NSIF jury process is one of the well-structured, robust processes that I have come across in this field. The eligibility criteria are well defined and the thematic areas are well chosen to represent a wide range of critical areas.

Further the jury process of selection and then validating the projects requires that each project should depict substantive scaling and replication capabilities while at the same time being able to address specific pain points.

I am very happy to see the growth of NSIF as a front runner in this process and wish them all the best in their future endeavours. India has certainly gained from NSIF.



Debjani Ghosh,
Ex VP, Sales and
Marketing Group, MD
South Asia,
Intel Corporation

Technology is becoming an extremely integral part of society, shaping how we think, and it's empowering innovators across India to think of new ways of solving problems that have existed for ages & ages in India.



Dr. Ganesh Natarajan,
Chairman, NASSCOM
Foundation
Founder, 5F World

As a country we are in the midst of a social transformation, there is a tremendous amount of potential in our country but it needs inclusion, it needs everyone in this country to participate, with the right support innovators can make their mark on society



Manvel Alur,
CEO and Founder,
Environmental
Synergies in
Development

With a gamut of social & environmental problems faced, our country urgently needs out-of-the-box sustainable & scalable solutions. NSIF is a great platform for social entrepreneurs to establish, test and innovate on social solutions.



Nataraj Kuntagod,
R&D Sr. Principal,
Technology Labs

At Accenture, we are passionate about developing cutting-edge technology that can enable social entrepreneurs to create

sustained impact for the communities in which we work and live. I was highly impressed by the social enterprises participating in the NSIF Challenge and look forward to working with them and embarking on a journey to make a real impact on the society.



Niranjan Khatri,
Founder, iSambhav
and Principal
Consultant

It's heartening to see NASSCOM Foundation encourage social innovators across our country. As it is innovators such as these that work to solve some of the most difficult socio-economic challenges and contribute towards achieving long term sustainable development goals. I wish the NASSCOM Social Innovation Forum all the very best as they move into the future.



Prasanto Roy,
VP & Head, NASSCOM
Internet, Mobile
and E-com.Council

I believe that quite a few of these projects have potential to make a difference to the Digital India Mission, if they are allowed to scale and if they are encouraged and mentored to a level, where they can be replicated.



Raja Shanmugam,
Chief People Officer,
Happiest Minds
Technologies Pvt Ltd

It was my pleasure and privilege to be part of the NSIF Jury in 2016.

The exercise gave a wonderful insight into the tremendous melting pot of innovation that is brewing across the country that we would have otherwise missed in the “busyness” of our daily routines. It was humbling to see the scale of innovation and public spiritedness, stitched together by technology. It was not just the technology that was innovative, but the ways they were sought to be deployed.

It was fulfilling to be able to add value to the process by bringing in our professional and entrepreneurial experience in evaluating the shortlisted submissions on different parameters - I am hoping that the process would have added to the learning of the participants even if they did not end up making the cut, through the feedback they received.

The additional avenue of support on offer in the form of direct mentoring through players like Accenture was a clear indication that this is not just another awards contest, but serious about seeing the innovation through towards fulfilling its purpose for the intended market place and audience.

Personally, I also enjoyed rubbing shoulders with some of the most accomplished jurors during the day.

My congratulations to NASSCOM Foundation for another successful edition of the event and my sincere prayers for continued execution of the program that gives such a wonderful platform for our social innovators.



**Ravindra
Krishnappa,**
CEO, Collate Box

NASSCOM's Social Innovation Forum truly stands for its motto : Tech for good. I've seen the number and calibre of applicants rise over time and it is heartening to note that the energy levels and entrepreneurial activity continues to be top-notch.

The thematic focus allowed us to evaluate the applicants on an even keel. While sectors like Education, Healthcare, Livelihood continued its dominance (and rightly so), it was the growth of other sectors (Accessibility, Agriculture, Environment etc.) that was very encouraging.

What was also good to note was the level of involvement and commitments demonstrated during the mentor workshops - a simple measure to me personally was the follow-up. It was top-class and I do hope all the participants see themselves as winners - they truly are!



Sanjay Podder,
MD and R&D Head,
Accenture Labs India

There is a need to help social innovators scale, and to scale you need technology, and bringing the right the right ecosystem players together - corporates, thinkers and innovators alike to come together to create lasting impact. This is where I feel platforms such as NSIF play a role, and can have tremendous potential moving forward.



Sanjiv Tare,
Vice President,
NextGen PMS

Participation in NSIF was a fantastic opportunity to witness the meaningful impact being made by various innovators across the spectrum, of challenges our society is facing.

Participants in NSIF have clearly defined how one can leverage technology to leap over the gaps in social, economic, and environmental systems and empower

communities to lead their transformative journey.

It was a great learning to see how innovators are disrupting the conventional thoughts and ways of working, especially in healthcare, and enabling the communities with the active use of digital platforms and handsets to access healthcare, responsibly-managed medicine information and emergency support.

The biggest task in front of all of us is to see how we nurture the capabilities of our social sector to design, develop and deliver solutions to the most uncared, undercounted and invisible members of society such that it may assist them to achieve their aspirations.

I am sure NSIF would continue to play a pivotal role for being the meeting point for such path-breaking ventures.

Acknowledgements

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To begin with, we would like to thank our Platform Partner and Innovation Catalyst for this year - Mphasis as well as our Technology Advisory and Support partners Accenture Labs India whose support has been unwavering and crucial in all the Forums activities. We would like to extend a special thanks to Mr. Puneet Bhirani, Executive Vice President- Chief People and Administrative Officer, Mphasis; Mr. Sanjay Podder, Managing Director and R&D Head, Accenture Labs India. Our sincere thanks to Dr. Meenu Bhambani, Head Global CSR, Mphasis and the Office of Diversity.

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Sincere thanks to our network of innovators - the change makers whose efforts are transforming the Indian development landscape. They are also grassroots pioneers who are creating some of the most ground breaking technological innovations that aim change how we solve many of the world's most pressing developmental challenges.

We would also like to thank the jury

members who have over the years helped us select the best innovations and acknowledge all the experts, investors and ecosystem supporters who have provided us with valuable insights.

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- 3. Anand Babu, Founder and Director, Jayalaxmi Agrotech Pvt Ltd**
- 4. Anu Thomas, Program Manager, Headstreams**
- 5. Ashish Garg, Founder and CEO, Discover Tomorrow**
- 6. Debjani Ghosh, Ex VP, Sales and Marketing Group, MD South Asia, Intel Corporation**
- 7. Dr. Naveen I. Thomas, Founder, Headstreams**

8. Himanshu Giri, CEO, Pratham Books
9. Janhavi Joshi, Co-founder, BleeTech Innovations Pvt Ltd.
10. M.S Raju, Founder President of Vision Aid India
11. Manu Madhusudanan, CEO and Co-founder, Coeey Technologies
12. Manvel Alur, CEO and Founder, Environmental Synergies in Development
13. Mr. Puneet Bhirani, Executive Vice President- Chief People and Administrative Officer, Mphasis
14. Mr. Sanjay Podder, Managing Director and R&D Head, Accenture Labs India
15. Nataraj Kuntagod , R&D Sr. Principal, Technology Labs
16. Niranjana Khatri, Founder, iSambhav and Principal Consultant
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21. Purvi Shah, Head Digital Projects, Pratham Books
22. Rahul Pathri, Founder and CEO, Docturnal Private Limited
23. Ravindra Krishnappa, CEO, Collate Box
24. Rinku Ranjan, Co-founder, EasyM2M Technologies Pvt Ltd
25. Sanjiv Tare, Vice President, NextGen PMS
26. Saravanan Sundaramoorthy, Founder and CEO, EdSix Brain Lab Pvt Ltd
27. Shivaprakash, Co-founder and COO, Jayalaxmi Agrotech Pvt Ltd
28. Siddharth R. Mayur, Founder and CEO, h2e Power Systems Pvt Ltd.
29. Suraj Dixit, Managing Director and Founder, Nubesol Technologies Pvt Ltd

About NASSCOM Foundation

NASSCOM Foundation is a non-profit organization registered under the Indian Trust Act, 1882. Our vision is to leverage Information and Communication Technologies (ICT) for empowering and transforming the lives of the underserved. One of the primary reasons for the formation of the Foundation was the commitment of NASSCOM and its member companies to promote social development through the application of ICT and NASSCOM Foundation works towards this aim by nurturing the ecosystem for Technology for Good.

The Foundation has two functional program areas - Firstly, fostering ICT for development, by bringing game changing innovations and projects to the forefront and unlocking their potential, thus bridging the digital divide between the urban population and the rural underserved; and secondly, promoting Business Responsibility (BR) within the IT industry in India. By creating various initiatives, the Foundation encourages NASSCOM member companies to drive lasting social change, while promoting and assisting them every step of the way.

We believe that ICT helps underserved populations access information, services and opportunities which build their capacities to realize their potential. NASSCOM's member companies have been engaged in various initiatives via the Foundation and we intend to become a catalyst, encouraging these corporates to do more, capturing best practices, and promoting and assisting their replication.

The Foundation is engaged in a number of initiatives, which are multifaceted and

leverage on the power of partnerships with the implementing agencies, industry, government bodies and people at the grassroots level. In line with the theme of 'Technology for Good', NASSCOM foundation has developed four key programs.

Skills Initiative

The NASSCOM Foundation Skills Initiative is aimed at enhancing livelihood opportunities of youth amongst underserved communities in India through employment and micro-entrepreneurship. The program is in line with the National Skills Development Council's goal of getting 125 million individuals skilled by 2022 and works with the Sector Skills Council NASSCOM (SSC NASSCOM) to provide specific employable skills required by the IT-ITeS industry in the country. Today, NASSCOM Foundation works with more than 12 donor organizations like Amdocs, Cisco, Concentrix Daksh, Thomson Reuters, Microsoft India, etc to implement Skill development and employability initiatives across India.

National Digital Literacy Mission (NDLM)

National Digital Literacy Mission is a dynamic and integrated platform of digital literacy awareness, education and capacity programmes that will help rural communities fully participate in the global digital economy. NDLM is aligned to the Indian Government's vision of making one person in each household

in the country digitally literate by 2020. NASSCOM Foundation, as the industry's Secretariat for NDLM is enabling digitally empowered communities via digital literacy centers that are housed in a unique community. Through existing CSR initiatives of corporate partners and through NGOs, NASSCOM Foundation is making implementation faster and more effective. Partners include Cognizant, Capgemini, Cyient, Zensar and Amdocs. Content contributing partners include Intel, Microsoft, GTT and Online Tyari.

Disability Initiative

Since 2010, NASSCOM Foundation has been working towards the goal of creating a sustainable ecosystem for promoting inclusion of persons with disabilities and making ICTs accessible to all. The Disability Initiative encourages inclusion in the IT-BPM industry by sensitizing the sector about accessibility (barrier free workplace and assistive technology) and employment. There are approximately 5.5 million people with disabilities, in the 12-24 years age group in India who face discrimination right from getting access to education to finding suitable employment opportunities. As a result, one of the key goals of the Disability Initiative is to promote 'Equal Opportunity Employment' within the IT-BPM industry. Disability Initiative helps companies inculcate inclusive best practices from all four aspects of disability - Physical accessibility, Web accessibility, Assistive technologies and Employability.

Apart from sensitizing the sector about inclusion of PWDs in the mainstream IT industry, NASSCOM Foundation also enables the people with disability to get Skill trained, to be able to have better job opportunities. We also look forward to directly interact with employers and help them interact with PWDs in a more efficient way.

The Foundation is working to build an assistive technology marketplace that will engage PwDs, experts, developers, IT industry and the Government in promoting and implementing web accessibility and

creating effective indigenous solutions that are Assistive Technologies (AT).

NASSCOM Social Innovation Forum
The NASSCOM Social Innovation Forum (NSIF) aims to enable and strengthen innovations that empower and impact lives at the bottom of the pyramid, enhance delivery of basic services like education and healthcare to rural populations and the underserved communities. The forum empowers NGOs, social enterprises and citizens - the vehicles of social change and helps them refine their innovations to achieve deeper and broader social impact. The platform does this through special thematic challenges, awards, seed grants and mentoring. The program, with support from its corporate partners, and working with NGO and not-for-profits, aims to impact one lakh beneficiaries in 2015. Instituted in 2008, the program has attracted more than 2000 innovative projects from across NGOs, corporates, social enterprises, government bodies, PSUs, students and individuals. The last edition of NSIF was supported by Mphasis and Accenture Labs.

The NSIF program also works as the principal partner to the Mobile for Good Awards (M4G) with Vodafone Foundation, with the aim to recognize, promote and support mobile innovations for driving social change. NASSCOM Foundation and Vodafone Foundation have also come together and created "Social App Hub" - A unique, first of its kind, appstore for social apps. Recently both the organizations have also come together to launch 'Solutions for Good', a program with the aim to deliver technology solutions for NGOs/NPOs to induce large impact.

BigTech

BigTech, the NASSCOM Foundation software donation program, assists NGOs reduce their ICT costs simultaneously scaling up their operations and making them more efficient by providing them access to software donated by our donor partners. BigTech currently has a variety of software from donors like Microsoft, Google, Adobe, Bitdefender, Citrix, Eagle

Conferencing, FluidSurveys, Busy, O&O Software, Box, Symantec, Quick Heal, Autodesk and Tableau.

BigBridge

The BigBridge Program is an offering to the companies to ensure responsible e-waste management, promote reuse of computers while cash strapped NGOs receive computers. The program gives new purpose to redundant computers and peripherals by promoting re-use and refurbishment of end of life systems. This in turn, helps NGOs access technology and scale up their operations in areas of education, employability, health and entrepreneurship.

The program has recently tied up with the government of India and in partnership with MAIT and CEAMA, is helping sensitize people on e-waste throughout the country, starting with a pilot project of 10 cities.

MyKartavya

The MyKartavya program connects the industry and its associate to a wide range of volunteering opportunities, and also helps manage and evaluate their volunteering efforts. The program aims to promote strategic volunteering to build capacity of NGO professionals, underserved communities and employees of the member companies.

MyKartavya has recently tied up with the Government of India to encourage cashless transactions. The Digital Financial Literacy campaign has volunteers from across industries coming forward to help beneficiaries from all walks of life get equipped and comfortable with digital transaction tools. The campaign runs on 'each one, teach ten' pedagogy, where every volunteer teaches 10 beneficiaries.

Indian Public Library Movement

The Indian Public Library Movement (IPLM) works towards the re-establishing the importance that Public Libraries deserve

in the present context: a repository and source of information and ideas, a place for learning and enquiry, and for the generation of thought and the creation of new knowledge. Indian Public Library Movement is supported by Global Libraries Initiative and hosted by NASSCOM Foundation in India. IPLM has been conceived to revitalize Public Libraries as inclusive knowledge and information centers catering to the 21st century information needs of communities. The program is working towards uplifting the public libraries by application of relevant technology and making it into a community centre which not only gives knowledge but also engages with the community at a broader level .

