

tddb
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Technology Development Board



INVENT Programme

Empowering lives *through* **Innovation**



Dr. Bindu Dey
Secretary
Technology Development Board

The Technology Development Board (TDB) has been financially supporting companies that intend to upscale and commercialize, the indigenous and imported technologies by providing soft loan, equity and sometimes grant. Two third of the funded companies launch their products in the market meeting competition of the cost, technology and other market dynamics. However, it was felt to foray into spaces wherein solutions to many socially –relevant problems using novel technological interventions and business models could be possible.

The opportunity has been devised through a programme called 'Innovative Ventures and Technologies for Development (INVENT)' wherein Department for International Development (DFID), India and TDB have joined hands. INVENT aims to provide innovation-led solutions to problems of healthcare, Agriculture, Water & Sanitation, Education, Green Energy, Housing etc. through such enterprises who work in these spaces. The programme has been successfully launched through Villgro Innovations Foundation as the Lead Incubator and four Technology Business Incubators for identifying, mentoring, funding and helping them graduate.

This issue of TDB News provides glimpses of successes achieved under INVENT Programme through commitment and hardwork of all stakeholders. The feedback of readers of TDB News on various dimensions of the Invent programme as elaborated in the pages that follow will be very valuable and we look forward to the same.

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Disclaimer : Views expressed in invited articles are those of the authors and not necessarily subscribed to, or endorsed by TDB or any other organisation associated with the publication of TDB News.

Cover Photo : <http://prosoc.co.in/#outreach>
(Prosoc Innovations Pvt Ltd is an INVENT incubatee under SIIC IIT Kanpur. Prosoc's flagship product, 'Deskit' is an innovative school bag which can covert into a desk thus addressing the lack of adequate infrastructure facilities in rural schools in India)



INVENT Programme

Empowering lives through Innovation

India has witnessed tremendous growth in last two decades yet some percentage of population faces socio-economic challenges. The Government of India has identified about 165 districts that need special handholding for the fruits of growth and development reaching them. Local entrepreneurship, technological interventions and in-situ business-models are being experimented for outreach to those in need.

The Technology Development Board (TDB), Government of India in partnership with Department for International Development (DFID), UK through its India Division have come together to initiate the "Innovative Ventures and Technologies for Development (INVENT)" programme.

INVENT programme is a platform to support inclusive innovative solutions, both technological and business-oriented that have positive social and economic impact on deprived strata of the society. Innovation-led entrepreneurship has the

potential to reduce the disparity in social status through novel solutions, scalability, sustainability and affordability.

INVENT is addressing challenges and barriers across the inclusive innovation lifecycle, for the benefit of up to one million needy populace at the bottom of the economic pyramid in the eight Low Income States (LIS) of India i.e. Uttar Pradesh, Madhya Pradesh Bihar, Chhattisgarh, Jharkhand, Rajasthan, Odisha and West Bengal to come out as entrepreneurs, producers, consumers, employees and suppliers.

Social enterprises in these states receive funding and incubation services to develop and scale innovative and sustainable solutions to healthcare, Agriculture, Education, Green energy, Affordable- housing, Water and Sanitation. The entire process is aimed to support up to 160 entrepreneurs and make at least 50 of them investable in the next 5 years.

INVENT webpage
tdb.gov.in/invent-program/



Signing of Agreement between TDB and Villgro

“ I am very happy to see the INVENT programme nurturing bright entrepreneurs in the low income states of India. ”

Karthik Krishnan
Private Sector Advisor
DFID India



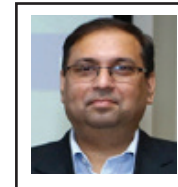
“ Absolutely satisfying to see the INVENT programme bringing innovative solutions impacting lives of the people in a positive way. ”



Anjali Sablok
Deputy Programme Manager
DFID, India



“ INVENT Program has energized the social entrepreneurship ecosystem and is catalysing sustainable impact ventures. ”



Subhrangshu Sanyal, CEO, IIM CIP

INVENT - Partners

Funding Agency

DFID, India has provided up to £ 5 million in form of technical assistance for a period of 5 years from 2014 till 2019.

The framework of the programme is primarily to lead to 50 'investment ready' businesses in LIS over the period of the programme, alongwith other social indicators as alternate outcomes

Implementing Agency

Technology Development Board is coordinating and supervising the INVENT Program on behalf of Government of India.

Lead Incubator

Villgro Innovations Foundation, Chennai (VIFC) has been designated as the Lead Incubator mandated to manage INVENT program. Villgro has further identified & supported, along with DFID & TDB, four Technology Business Incubators operating in identified states of Odisha, Uttar Pradesh Rajasthan and West Bengal.

As the Lead Incubator, Villgro incubates, mentors, supports the enterprises participating in the program. It handholds innovative business ideas of seed / early stage enterprises that have the potential to benefit the poor in LIS while also being commercially viable.

“ Low Income States in India have a dearth of incubators and entrepreneurship enablers that catalyse social entrepreneurship. INVENT programme solves that by funding, mentoring and supporting social entrepreneurs and making them investible. ”



Paul Basil, Founder & CEO, Villgro Innovations Foundation

INVENT - Governance Structure

Advisory Board

An Advisory Board has been formed to provide strategic advice and guidance to the programme team to help achieve the programme deliverables.

Program Steering Committee (PSC)

PSC is responsible for overall direction and implementation of the program. It has representation from TDB, DFID and Villgro.

Program Management Unit (PMU)

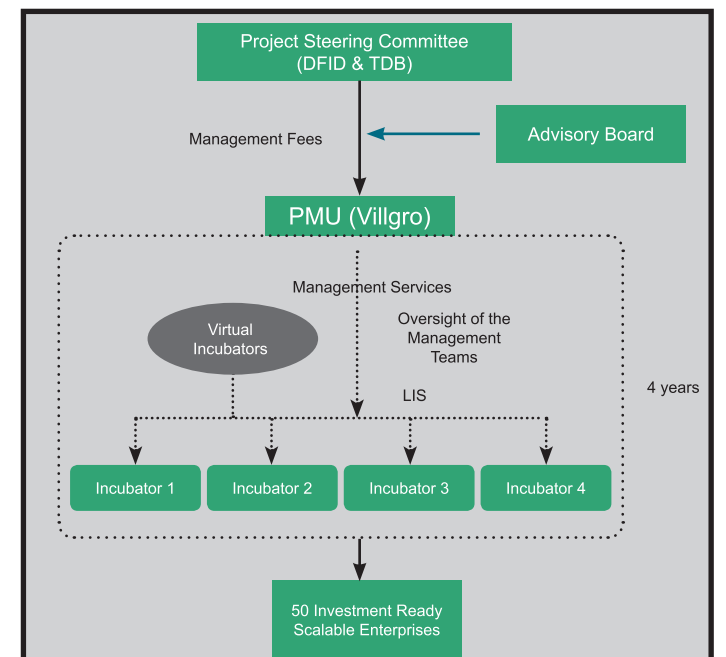
TDB/ Villgro PMU located at TDB office is handling the day-to-day management and administration of the programme.

Business Incubators

Four TBIs have been selected and provided with technical and financial assistance for mentoring, networks, know how, templates etc., to make them successful at social enterprise incubation.

Based on capacity evaluation, such as fostering sustainable social enterprises ready for investors and other funders, following Business Incubators have been selected for implementation of INVENT Program:

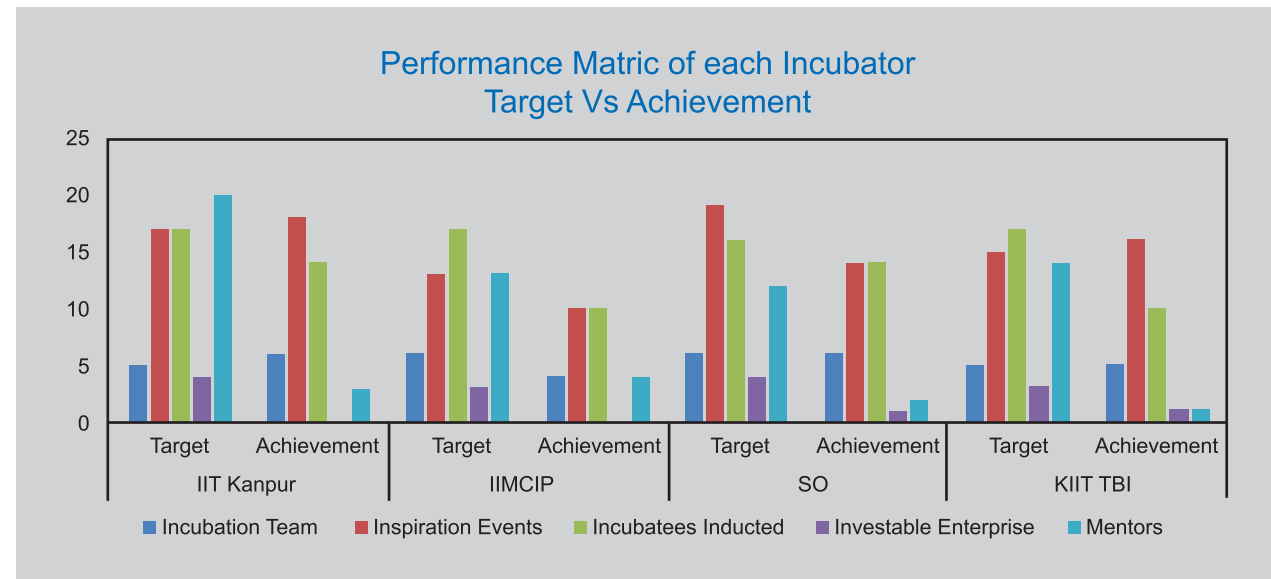
- i) IIT Kanpur, Kanpur
- ii) Start-up Oasis, Jaipur,
- iii) IIM Calcutta Innovation Park, Kolkata
- iv) KIIT-TBI, Bhubaneswar



INVENT Progress Report

The progress of INVENT programme is tracked using following milestones for each incubator: -

- i. Ramp-up of incubation team size
- ii. Number of inspiration events organized
- iii. Number of incubatees inducted
- iv. Number of mentor's on Board

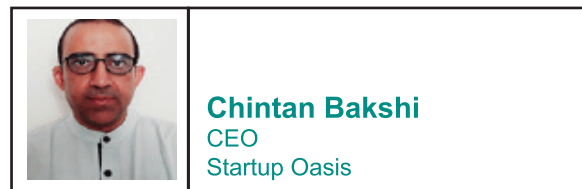


INVENT Impact

Significant market opportunity exists to develop sustainable solutions to social and economic difficulties facing low-income communities at the bottom of the pyramid (BoP). Yet, providing relevant products and services to BoP markets is often complex and high risk.

There is a serious shortage of social venture incubators to provide the capacity- building and incubation support needed at idea/ pilot/test stage, both in India as a whole and particularly in the low-income states.

- Grant financing is most needed at this stage, rather than equity or debt financing, because of the lower costs involved and the higher risks associated: investors are likely to



The INVENT programme has channelized the entrepreneurial energies of the youth of Rajasthan towards solving the myriad problems ranging from dryland agriculture, water sufficiency, access to education and healthcare to building scalable business models around the traditional arts and crafts.



INVENT programme has created a momentum to scale up Social enterprises. KIIT-TBI has expanded its social incubation vertical by leveraging mentorship, market connect and funds available through INVENT programme and making social impact.

tranche of funding support. This has provided employment to about 110 individuals with an encouraging gender balance. 65% of the individuals employed are men, while

It is very rare to see such 360-degree support system to social enterprises, the way INVENT does so to make them scalable and profitable



35% is females are women.

incur significant transaction costs and are unlikely to identify appropriate exit strategies. The current dearth of grant financing limits the available pipeline for impact investing in India.

- The lack of such investment also limits India's role as a global innovation hub. INVENT is a platform that facilitate more investment were available to test new ideas generated by India's entrepreneurs.



INVENT Social Incubation programme at IIT Kanpur offers the most comprehensive support package to social enterprises where they are provided with initial funding followed by hand holding, diagnostics, mentoring that boosts their chances towards sustainability and scalability.

Under the INVENT Program, up to September, 2017, 19 enterprises have received the first

As on December 31, 2017, a total of 7 INVENT incubatees received follow on funding from other sources. Cumulatively, the companies were able to raise around Rs 7.6 cr within this period. Around 10 additional companies have been identified with potential pipeline for follow-on funding in the next quarter.

Invent Programme - Events

Under the INVENT Programme several inspirational, networking and capacity building events have been supported since its inception. "iPitch" by Villgro has resulted in generation of accelerated investment to social entrepreneurs. Through the pipeline generated as part of these events around 14 companies were considered under the INVENT Program across the incubators.

Apart from this, several other timely events are conducted as part of INVENT like the B-Plan Competition, SOCIOVATION, by KIIT Technology Business which attract a lot of young social entrepreneurs because of the interesting speaker sessions and competitions.

LORVEN BIOLOGICS

www.lorvenbiologics.com

Diabetes is a chronic medical condition, that is, it can be curbed at the initial level by introducing lifestyle changes. Because of its higher fiber content, Brown rice and other complex carbohydrates, such as millet, steel-cut oats and legumes, take longer to digest. A longer digestion time prolongs sense of fullness and helps keep blood sugar levels within normal ranges. For this reason physicians recommend brown rice for better blood sugar control. Due to fibre coating over brown rice, most people find it difficult to adapt to its taste.

About the Product

RICE DESIRE is a rice variety specially developed with high resistant starch and dietary fibre linked with Low GI Index. In this variety, even after polishing the rice fibre remains intact and tastes just like any other polished rice variety, while providing all benefits of rich fibre.

RICE DESIRE comes with certification for Dietary Fibre and Resistant Starch (> 12.0gm Per 100gm). It influences the low GI index for diabetic patients which release slow and sustainable release of glucose into blood stream after every meal.

Social impact

Since this rice variety is a value added healthcare product it yields more income to the farmer's than the conventional rice varieties, to the tune of Rs.17/ kg. Company is already offering free seed and buy back promise of the produce at rates higher than the market by ` 3/ Kg. Currently we enrolled 150 farmers at Odisha state under this initiative.

Meet the Innovator M. Venkatramma



Venkataramana. M. completed Masters in Microbiology from Andhra University, Vishakapatnam and obtained Ph.D. degree in Biotechnology from Defence Food Research laboratory, Mysore University, Mysore. He has published more than 50 international peer reviewed publications and filed 13 patents at national and international level. He has more than 10 years of experience in development of immune therapeutics.



BUBBLENUT WASH

www.bubblenutwash.com

Tribal families in Odisha India live in remote forest regions and depend on rainfed agriculture for sustenance. These regions are rich in unique fruits and berries.

By providing market access to some of these fruits and berries, farmers can have a new source of income when there is no agricultural work. One such fruit is 'Soapnut' that has high 'Saponin' content and hence can be used to produce an eco-friendly detergent.

About the Product

BubbleNut Wash is a brand of natural detergents. BubbleNut Wash provides a natural alternative to chemical-intensive detergents available in the market. In doing so, it also seeks to create income streams for communities living in and around forest areas in India.

Consumers in cities today are aware about downside of chemical detergents and also the environmental damage caused by release of detergents into ground water and other waterbodies. This gives BubbleNut Wash a niche that is rapidly expanding.

Social impact

By creating a market for eco-friendly detergents created from soapnuts harvested by farmers, rural families BubbleNut Wash has created a sustainable source of income and reduced cutting down of forests.

The enterprise has been working with more than 90 beneficiaries and has generated a total direct income of INR 2.5 lakhs in the last 12 months.

Meet the Innovator Manas Nanda



Manas Nanda, Founder of BubbleNut Wash comes with a rich experience in research and credit analysis. Academically, he has a degree Business degree from University of Oxford and CFA from Virginia, US.

His dreams of creating a sustainable economy around forest products triggered him to initiate his efforts that led to setting of BubbleNutWash.



DECENTRIK TECHNOLOGIES

www.waah.biz

Drinking water is the bedrock on which human existence rests. Each day millions of on-the-go consumers feel the need of an affordable, yet hygienic drinking water option. The current needs of water while on the move are either addressed by expensive packaged water bottles and/or possibly unsafe plastic water pouches, water trolleys and tap water. The plastic waste so generated is becoming a huge concern for the environment.

About the Product

Decentrik Technologies has developed a mobile water ATM (named 'Waah') which dispenses 250mL of clean drinking water at just Rs. 2. A network of Smart Mobile & Fixed Water ATM's, placed at high footfall public places provide consumers-

- * An affordable and accessible water solution
- * Real time quality display and on the spot quality check of water being served.
- * Recyclable paper glasses to avoid the plastic waste.

Company has already signed MoUs with Lucknow and Kanpur municipal corporations as well as HPCL, IOCL for installation of water ATMs in locations under their control.

Social impact

The initiative not only addresses health aspects that are linked to access to clean drinking water, it also contributing to goals of Swatchh Bharat Mission of Govt. of India.

43 Mobile units and 6 fixed unit have already been installed creating direct jobs created for 50 people.

Meet the Innovator Vineet Vats



Headed by **Vineet Vats**, the company is working towards providing a simple and inexpensive solution to drinking water needs of the people on the move.

Vineet Vats is a social entrepreneur with 5+ years in Marketing of Industrial Automation Product, He is first time social entrepreneur, the captioned project is the source of his identity.



Waah water kiosk, due to its compact size can easily reach high density public places and provide pure drinking water/beverages at the lowest price in the market. The unit monitors the quality of water in real time through its software and sensors and if any case the quality of water goes against the standards, the unit is automatically shutdown.

PROMORPH SOLUTIONS

www.organic.in

Teacher absenteeism in government schools in rural India is a huge and well-documented phenomenon. Teacher absence is directly associated with student attendance, as well as negative deviations in academic performance. Since implementation of schemes like Mid Day Meal are linked to teacher attendance there is a need to find technological solutions that help monitor rural schools for various performance imperatives.

About the Product

EmpowerU is an Innovative Analytical Platform for Educational Monitoring & e-Governance. It leverages information and Communications Technology and Data Analytics to address the issue of quality of education in, and management of, government schools. The Mobile app works online as well as offline which makes it very effective even in rural areas with internet connectivity challenges. It is also equipped with GPS for location tracking of teachers while performing official activities. The analytical web application provides real-time monitoring of thousands of schools and provides data in a consumable for Data Driven Decision making through centralised control room.

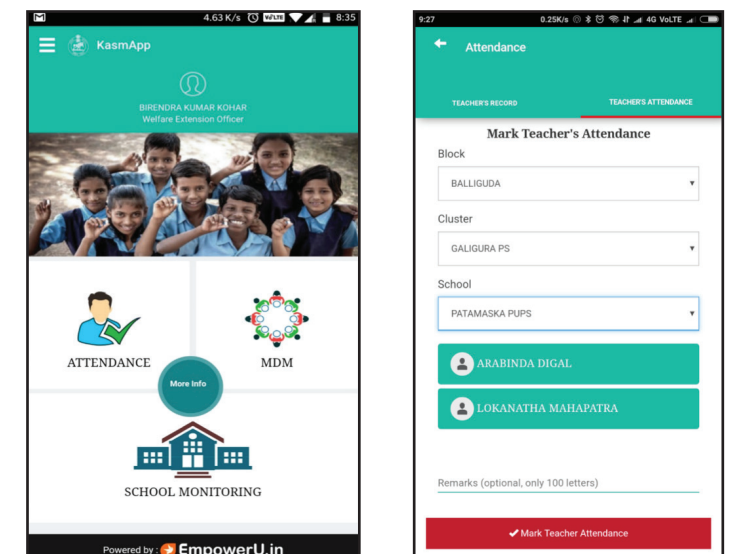
Social impact

Implemented in 5000 schools monitoring 7500 school teachers and 150,000 students ever day. Teachers' attendance rates have improved from around 58% to more than 90% in target area. Leave compliance and transparency improved. Mid Day Meal serving (critical for keeping school drop out rates in check) improved from around 77% to more than 90%.

Meet the Innovator Onkar Prasad



Director at Promorph Solutions, **Onkar Prasad** has experience in data analysis/mining, building statistical models and financial risk management. He has completed Master in Industrial Engineering from IIT-Kanpur. He founded this company on March 2015, and got incubated at SIDBI, IIT Kanpur, received initial investment of 25 Lakhs through INVENT Program, implemented online attendance monitoring solution in more than 5000 Schools of Giridih District Jharkhand & Kandhamal District Odisha.



CATTLE METTLE

www.cattlemettle.com

Managing food and agri waste is an increasing global problem. As a matter of fact, in India alone, 310 Million of agri residue is burnt every year and millions of tons of urban waste goes unaccounted for.

India possess 30% of world's cattle population and dairy sector and animal husbandry have become major source of man-made GHG emissions. Since milk is an important part of food basket, Governments across globe are calling upon innovations for sustainable dairy production.

About the Product

Krimanshi is a triple bottom line company venturing into cattle feed production from farm, forest and urban wastes with a bold mission to reduce GHG emissions in dairy sector.

Under Cattle Mettle aim to bring about cumulative changes across dairy farming domain and beyond. With an integrated of better dairy production, waste upcycling and employment opportunities, Cattle Mettle has been working to create impact in the dairy sector.

Social impact

- » 200+ farmers impacted in Jodhpur and Pali districts in the state of Rajasthan.
- » Milk and fat production increased by 25% and 20%, respectively.
- » Farmers' income increased by up to 30% while saving 10% on veterinary expenses.
- » Created 16 direct and indirect jobs

Meet the Innovator

Nikhil Bohra



Working as CEO, **Nikhil Bohra** is experienced in product development, operations and sales. He has completed Biotech Engineering from VIT University, Vellore. He is among Forbes 30 under 30, Class of 2018 and has won UNIDO's award for innovative technologies in agri-business for Cattle Mettle, August 26th, 2015, EXPO Milan; and Asia-Africa winner, for "Cattle-Mettle", at Global Social Venture Competition, 2015 - UC Berkeley, USA.



Currently, 5C Network is connected to 90 clients and work with 60 radiologists, both distributed all over the country and are processing over 500 cases every day. Prominent clients of 5C include Government of Karnataka, Bharat Scans, Aarthi Scans, Lakhota Medical Centre, SRL Diagnostics and many other well known chains.

ONGANIC FOOD PRODUCTS

www.onganic.in

The organic food market in India is growing at 25-30 per cent, but the awareness about organic farming is still low in India. According to a study, in 2014, the size of the organic food market, which is highly unorganised, was \$0.36 billion, and organic pulses and foodgrains took the lion's share of the market. Training farmers to take up organic farming with marketing support can help enhance rural incomes in a big way.

About the Product

ONganic Foods is a Leading Organic Foods Company based in West Bengal, India. ONganic works across the value chain - Farming, Processing, R&D, Domestic sales in B2B and B2C categories. ONganic's vision is better livelihoods for farmers, health & wellness for consumers and a sustainable planet. ONganic produces 50+ organic products, and has a supply chain that encompasses 300 farmers and 200+ hectares.

ONganic has a pan India presence with in house production, packaging and distribution facilities at Nadia (West Bengal). Processing set-up with adequate quality control measures has taken ONganic a long way in terms of volumes.

Social impact

The enterprise has trained farmers in organic cultivation, input preparation, seed saving, and good post-harvest practices. It has organised farmers into a farmers' produce company — ON Farm Fresh Innovation Producers Company Limited — supported by NABARD. It is also training farmers in ICT platform that can enhances productivity and efficiency.

Meet the Innovator

Ekta Jaju



Ekta Jaju is the brainchild behind this ONGANIC FOOD PRODUCTS. Her initial drive was about finding ways to help farmers get better prices for farm output as finding a just and reliable market for farm produce is often a challenge. The company focuses on Identifying grains and pulses that can, if grown organically, fetch twice the normal market prices. Providing farmers with the necessary inputs and training to produce the required quality of produce is the strategy she has adopted at ONganic.



5C NETWORK

<http://www.5cnetwork.com>

Diagnosis is considered as 3/4ths of the remedy, and radiodiagnosis today is the most important and commonly required form of diagnosis for almost every sort of ailment. More than 50% of Deaths in non-metro cities are due to delayed diagnosis or diagnosis that did not happen due to unavailable facilities. To address this, 5C Network is creating a unique radiology network: a collection of the best specialist radiologists along with superior technology to ensure fast, accurate and consistent radiodiagnosis reports

About the Product

5C Network provides 24x7 radiologist support online so that clinicians and surgeons at hospitals can have an accurate interpretation of a patient's images before deciding a patient's line of treatment.

Hospitals are equipped with tools to send scans and associated patient information in a streamlined and fast manner and radiologists are equipped with cloud-based analysis tools that allow them to view, manipulate and study images in greater detail, and write a detailed report using convenient tools that minimize their reporting time.

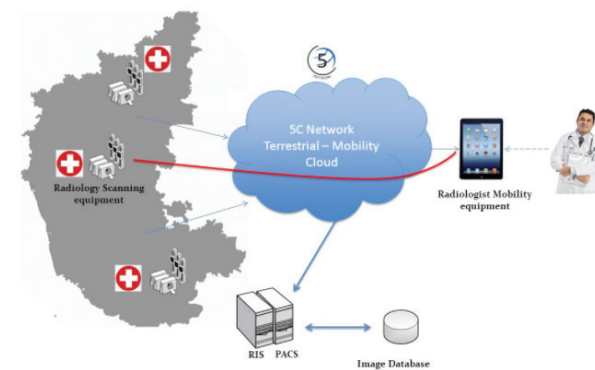
Social impact

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Meet the Innovator **K. Sivasailam**



Kalyanasundaram Sivasailam is working as CEO, 5C Network Pvt Ltd, since 2014. He has a PG Diploma in Intellectual Property Right Law from National Law School of India University, Bangalore and B.Tech from NIT Karnataka. His startup received best rising startup of the year 2016 award from iCMG and KEONICS; Placed 4th out of 130 top healthcare startups in a programme held by Unitus Seed Fund; Awarded the contract to implement Teleradiology across the state of Karnataka.



For more on 5C Network Pvt Ltd., please visit : <https://www.youtube.com/watch?v=VYwt7MajSGA&authuser=0>

MULTIBHASHI

www.multibhashi.com

Soft skills are often the ultimate stumbling block that prevents a large number of individuals from achieving their full potential in various walks of professional life. This is especially the case with rural hinterland where access to training and capacity building opportunity is restricted. This effects the employability of many promising persons in the rapidly expanding services market.

About the Product

MultiBhashi is a Technology & Virtual-classroom driven Language UpSkilling Platform for blue-collar & grey-collar workforce. It has a the capability to deliver content to the remotest corners of India independent of network connectivity and handheld device specifications to empower users in Indian hinterland to come online using prevailing networks. The platform enables seamless content delivery in an interactive format in 10 Indic languages in a Blended format constituting self-paced learning as well as Virtual Human Tutor Support.

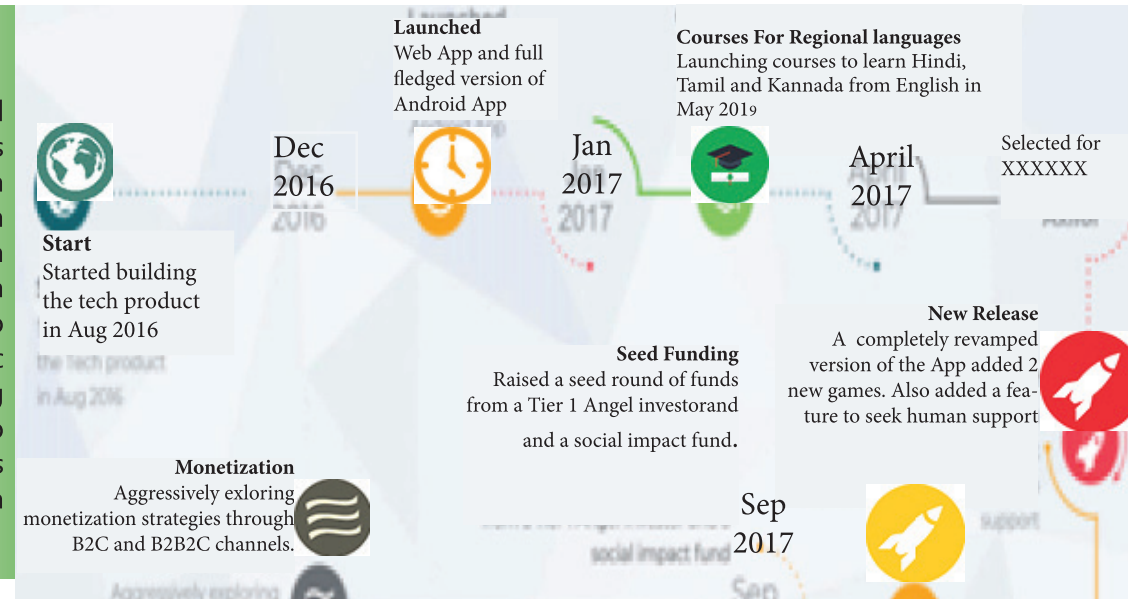
Meet the Innovator **Anuradha Agarwal**



MultiBhashi was founded by Anuradha Agarwal whose goal for social transformation at grassroots has won her several recognitions including recognitions including but not restricted to Axilor Mentorship (2016), Facebook Startup Program (2016), Forbes 50 Social Transformation Companies (2017); YourStory Social Impact Companies (2017). She has recieved funding support from Startup Oasis (Rajasthan Govt.) and Technology Development Board apart from individual angel investors.

Social impact

MultiBhashi has empowered key wage earners in various remote corners of India. On the one hand, the platform enables empowered women to adopt MultiBhashi as a bilingual teaching platform to disseminate soft-skills, linguistic upskilling, behavioral training & Personality development to guide rural students towards the path of merging with mainstream society.



About TDB

The Government of India constituted the Technology Development Board (TDB) in September 1996. The mandate of the TDB is to provide financial assistance to the industrial concerns and other agencies attempting development and commercial application of indigenous technology or adapting imported technology for wider domestic application. The financial assistance from TDB is available in the form of loan or equity and/or in exceptional cases, grant. TDB accepts applications for financial assistance from all sectors of economy throughout the year. TDB has also participated in Venture Capital Funds to wider its scheme for spreading support to technology oriented projects. Further, it also provides support to incubators through its Seed Support Scheme.

About DFID

DFID is leading the UK government's development partnership programme with 35 low income countries to help tens of millions in the low-income countries come out of poverty. India is a key strategic partner to the UK. Over the next 3 years DFID India will: -

- Focus on the poorest people in 8 low income states (UP, MP, Bihar, Chhattisgarh, Jharkhand, Rajasthan, Orissa and West Bengal).
- Put women and girls at the heart of our work.
- Unlock the private sector's potential to combat poverty.
- Develop a stronger partnership on global issues.

About Villgro

Villgro was founded in 2001 with the mission of incubating early stage, innovative businesses and has since worked in discovering thousands of innovations and innovators, and incubated over 100 businesses. It was envisioned an organization that moves away from the traditional form of charity to a more sustainable approach where the poor and marginalised are stakeholders in their own growth.

Villgro does this by tirelessly growing an ecosystem that supports social entrepreneurs and helping them building impactful, scale-able businesses with the potential to change the way communities live and function.

TECHNOLOGY DEVELOPMENT BOARD

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