Ministry of Electronics and Information Technology
Government of India

MEITY STARTUP



SASACT REPORT

[Document subtitle]

Nancy Khurana

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[Course title]

Keynote

From the Lens of Hon'ble MoS, Shri Rajeev Chandrashekhar

MeitY Startup Hub was envisioned to capture the technology startup ecosystem in India in consonance with the vision of our Hon'ble Prime Minister Narendra Modi, to be a nation of innovation and entrepreneurship by fostering startups and creating an enabling environment for young budding tech entrepreneurs.

The last decade was truly a "TechADE" for India with the growth momentum witnessed in the Indian Startup ecosystem. Commemorating the same, our Hon'ble Prime Minister gave a clarion call to designate January 16th as "National Startups Day" as a tribute to the entrepreneurial zeal displayed by the nation.

India, a land of heterogeneous diversity with a plethora of cultures and a multitude of ethnicities is a nation of not just 1.3 billion people but 1.3 brilliant minds with its youth population as its greatest asset. As a representative of the people in the world's largest democracy, we, at Ministry of Electronics and IT (MeitY), endeavor to facilitate and foster the ecosystem for Startups which is undoubtedly a key pillar for the Indian economy and a crucial driver for India's contribution to the world economy in times to come.

Wishing MeitY Startup Hub all the best and great tidings ahead in all their undertakings for the Technology Startup Ecosystem and for all that they espouse.

……xxx……

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SASACT Overview

Up to 10 crores+ funding

4 implementing agencies



40 Beneficiary/startups

1681 crores Current valuation of startups

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SASACT: Scheme for Accelerating Startups around Post COVID Technology Opportunities

Objective: To support electronics hardware/ ICT based tech entrepreneurial initiatives of startups for developing or re-purposing technologies, tools, systems, solutions to respond to the post COVID-19 scenario emerging in the near horizon. Immediate action areas identified are Smart/ digital manufacturing including 3D printing, Digital health/ MedTech, Edutech, Fintech, Work from Home (WFH) solutions and other solutions deemed fit in post Covid-19.

Area of coverage:

- Ensure effective and secure IT infrastructure for remote access
- More contactless interfaces and interactions
- AI based monitoring and surveillance
- Establishment of common information sharing approaches
- Enablement of Digital Health including diagnostics, testing monitoring and treatment
- Digital financial inclusion across locals in remote India
- Smart remote education and evaluation system
- Need for strong cyber security mechanisms and mitigating data breach challenges
- Deployment of innovative technologies and solutions for self and autonomous operations

Implementing agency:

- For maximum coverage of pan India, 4 Implementing Agencies (IAs) from four different corners of the country are implementing the scheme through Software Technology Parks of India (STPI), New Delhi as follows:
- Foundation for Innovation and Research in Science and Technology (Startup Incubation and Innovation Centre SIIC).
- IIT Kanpur, Society for Innovation & Entrepreneurship (SINE), IIT Bombay.
- Coimbatore Innovation and Business Incubator (Forge Accelerator), Coimbatore.
- KIIT Technology Business Incubator, KIIT University, Bhubaneswar.

Startup Briefs - SASACT Prospects

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Endimension Technology

Healthcare **Mumbai, Maharashtra**

endimension

Startup Brief

Endimension Technology is a healthcare Artificial Intelligence - AI startup incubated at SINE IIT Bombay. We develop AI integrated software solutions to hospitals and diagnostic centres.

Problem Statement

Each day, radiology departments at hospitals analyse a large number of patient scans. For every scan, they search for abnormalities and once found, they are characterized and reported. This process can take 15-30 minutes per scan. Due to the large influx of patients in India and understaffed radiology departments, the average radiologist is overworked, and the detection process is prone to human error.

Market Opportunity

The application of artificial intelligence (AI) in medical imaging is one of the most promising areas of health and medical innovation. Certainly, AI finds various applications in medical imaging such as image acquisition, processing to aided reporting, follow-up planning, data storage, data mining, and others. In recent years, AI has shown remarkable precision and sensitivity in the classification of imaging abnormalities and ensures to improve tissue-based detection and characterization.

Solution Concept

Endimension Technologies developed an End-to-End AI augmented Software Platform that provides an all-in-one solution to all steps in radiology reporting processing. The system integrates directly with all the stakeholders avoiding manual and potentially complicated procedures during the entire lifecycle of a scan, thereby decreasing the Turnaround Time and improving the accuracy.

Value Proposition (Word limit: max 200 words)

Our Algorithm improves the efficiency of radiologists by drastically reducing the time for diagnosis.

1. Reduce the number of missed abnormalities due to human error and increase the chances of early-stage diagnosis.
2. Improve radiologist's efficiency, by reducing the detection time to 1-2 mins as compared to 15-30 mins for manual inspection and detection.
3. Reduce the spread of infectious diseases by faster diagnosis.
4. Facilitate the faster operation of screening programs thus enabling the radiologist to screen more than 200-300 patients or scans in a relatively stress-free environment resulting in an accurate diagnosis.

Business Model (Word limit: max 100 words)

We are developing a cloud/desktop-based software solution that can be integrated with the existing radiology workflow. This makes our product easy to deploy and expand using Software as a Service business model.

Current Traction (Word limit: max 50 words)

The software is currently being used to upload radiology scans from 5 diagnostic centres / hospitals in Maharashtra.

How did MSH support you?

MSH supported us by providing MeitY-SASACT-Grant. With the help of the grant, we were able to create the deployable version of the product. Currently the product is being used at 5 hospitals and diagnostic centres in Maharashtra. MSH helped us to get the initial traction in the market. Now, we are looking forward to raising investment for scaling-up.

Team Key Members

Bhradwaj Kss – Founder, CEO; Apparao MLV – Co-founder, COO; Kurien Zacharia – Co-founder, CTO

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Xplorazzi

3D/AR **Bangalore, Karnataka**

Startup Brief

Xperi.nz digitizes retail products for immersive experience so that the online shoppers make better buying decision.

Problem Statement

Online shoppers need better visualization of the products they want to buy. Online retailers/ consumer goods companies cannot build these experiences just with text/images/videos, they need 3D models of products optimized for webAR to build AR experience with no-code effort.

Market Opportunity

Every time an online shopper browses and experiences, the collateral is accessed from our server, and we charge about 0.5 cent/click. Having 2.14 billion online shoppers (20% buy once a day, 63% buy once a week, 96% buy once a month) browse at least 5 products before they buy one and current AR supported phones having 40% of all shoppers gives us $2.5Bn of current TAM.

Solution Concept

A no-code platform to build immersive (Augmented Reality/AR) experiences for Direct-to-Customer (D2C) brands so that their consumers experience and interact with the product before they make a purchase.

Value Proposition

1. Automated 3D building of retail objects
2. AR experience of retail objects
3. No-code AR editor

Business Model

Pay per view: We charge retailers/consumer goods companies for every view happens using weburl

Current Traction

3 B2B customer with 6K paid B2C users

How did MSH support you?

MSH helped us with fund to build the product to market and then also promoted our post and pages from their MSH social media pages.

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DronaMaps

Drone based Mapping **Indore, MP**

Startup Brief

Command and Control Center solution built on the backbone of 3D drone maps. Integrating drone live feeds, CCTV, sensors, mobility data, with existing geospatial surveys to enable data backed decision making. DronaMaps Command and Control Center, applies emerging technology like drones towards helping developing countries achieve sustainable development goals.

Problem Statement

Utkarsh Singh, the CEO and founder of the company bought the first drone to film my (Ayushi Mishra) graduation walk at Hopkins. He is computer science and had worked with the technology at the University, however, holding the device in his hand and understanding the extent of its capabilities was an eye-opening experience. He brought it back with him to India and worked on the Sawan Jhula mela in Ayodhya. The festival involves the influx of 3 million people in a small city and therefore the creation of a temporary urban infrastructure to hold them. Swarms of drones created a 3D map for informing the analysis like exit routes, depth analysis for condoning off the dangerous areas of the river from the public etc.
https://medium.com/dronamaps/ayodhya-3million-people-3-days-7c299c371d8c The scale of impact possible with what are perceived to be off the shelf commodity drones is what drew us to this idea.

Market Opportunity

According to Goldman Sachs, civil and commercial use cases of drones are a $2 billion dollar industry.

Solution Concept

Integration of 3D drone-based point clouds with project & resource management to facilitate decision making.

Value Proposition

Creating complete transparency with what's happening on the ground and decision.

Business Model

1 year license with drone data collection charged separately.

Current Traction

Working with 7 states across India.

How did MSH support you?

SASACT grant helped us develop large scale solutions for enterprises and establish efficacy on the ground. Entire Punjab state property taxes are now on drone-based maps with transaction data integrated with GIS data. We are also stepping into private sector as well.

Team Key Members

- Utkarsh Singh: Founder and CEO (BS, Computer Science, Johns Hopkins)
- Ayushi Mishra: Co-Founder and COO (Biomedical Engineer, MS, Engineering Management, Johns Hopkins)

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iCapotech Pvt Ltd

Energy **Mumbai, Maharashtra**

LIVING THINGS

Startup Brief
The Company was founded on 26 March 2019. We have an IoT product platform "Living Things" that makes things smart. With an idea of making everything IoT enabled and taking this valuable data to improve an individual's life, we started Living Things.

Problem Statement
Air-conditioning has transformed summer living, but at tremendous environmental cost. More efficient ACs can reduce the power demand and help cut emissions. This prompted us to create a Sustainable AC Solution and hence we came up with the Living Things Platform.

Market Opportunity
In the last 5 years, the Air Conditioning market in India has grown from selling 4 million units in 2015 to 7 million units in 2020, which will grow to 9 million units in 2023. This translates our Indian Market Opportunity into a Potential Opportunity of 3.25 billion USD. Our Total Addressable market is 1.6 billion USD, in which our Niche Market Opportunity is of 1.1 billion USD for Businesses and Commercial segment of Air Conditioners.

Solution Concept
Living Things Platform helps to save a minimum 2 units/day/Air Conditioner on 8 hours running cycle, using our proprietary algorithm. Check our dashboard to know more: (Living Things Dashboard: business.livingthings.in, Credentials: Dummy User id - client@email.com, Password - client@12345)

Value Proposition
A minimum energy saving of 15% on air conditioners energy consumption. Automation, Scheduling and Monitoring of ACs remotely through smartphones from anywhere, anytime. Monitoring and Tracking of AC's energy consumption and savings on a single dashboard Increases efficiency of Inverter Split Air Conditioners by 25%. We help our customers to save at least 350 units/year/air conditioner which can help to reduce 320Kg of CO2 every year per AC.

Business Model
We charge a price of INR 3,000 per device / Air Conditioner for LT Aircon with 2 years of warranty on it.
Our Unit Economics includes: BOM of INR 700, Installation charges of INR 250 and on this basis, Margin of 68%.
The ROI period for the customer is one year.

Current Traction
Growth: We have completed 120+ installations on the ground with over 40+ customers. We have acquired customers like BPCL, Hikal Ltd, IIT Bombay, Kotak Mahindra ATMs and many more.
Revenue: We have generated a revenue of more than 6 Lakhs INR from AIRCON. Our revenue for FY 2020-21 was 18 Lakhs INR
Achievements: Maharashtra Startup Week 2021" award for Sustainability Sector by Maharashtra State Innovation Society. This has enabled us to get a pilot order worth 15 Lakhs INR from Government of Maharashtra.

How did MSH support you?
MSH has helped us financially, thus achieving our following projected targets in the Company:
Team Building: Hiring new resources and interns in the team
Product Development: Launched app on Playstore (tinyurl.com/sb593azb) and Appstore (tinyurl.com/vhh8r62v).
Energy Saving Feature addition in the product. Dashboard Development.
MSH also gave us visibility to build trust in the market to perform Proof of concept (POC's)
at customer sites.

Team Key Members
The following are the core team members: Madhusudhan Naik, Founder and CEO

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Too Decimal Pvt. Ltd.

Agriculture **Tohana**

Startup Brief

Too Decimal Private Limited reflects high precision through unconventional technologies. We provide precise weather monitoring at the local level. We are as precise as it is going to rain at 11:47 AM at your office. It is similar to Google maps but monitors precise weather rather than traffic.

Problem Statement

In this pandemic time, it was difficult to manage transport of wheat to the shelter without precise weather information. Hence, the BhuGoal offered free of cost precise weather information to the farmers. It will save wheat worth USD 2.7 Mn to different farmers and the government warehouses. Moreover, the billion-dollar satellites for predicting weather are useless since the predictions are not precise and for villages, it's even worse. The rain prediction is equally important in several sectors such as aviation, outdoor sports, events and transport/tourism.

Market Opportunity

Weather forecasting and prediction industries success is defined by the rate of accuracy of prediction of the weather at that particular area at a specific time. BhuGoal utilizes existing infrastructure in the form of satellite dish services for television (TV) (Direct to Home) installed and records the instantaneous signal strength by cost-effective nodes. Hence, we are able to offer weather API services with covering predictions close to 50m with better accuracy than any other competitor. Also, the quality of predictions is the best for mapped rural regions of India.

Solution Concept

We all watch television and most of us have dish satellite antennas (Tata sky, airtel etc.) installed on the rooftop. The signals get distorted when the weather gets bad. Bhugoal notes down the signal and continuously send it to the BhuGoal server. The signal received from several BhuGoal nodes installed at different places are analyzed continuously at the server. The weather information is obtained from 10 BhuGoal nodes installed within every 5- 10 sq kilometer radius. The forecast is enabled by spatial information viz the cloud is traveling from 100 km towards south and will reach us in 2 hours and will rain in 3 hours. Hence the spatial information cumulative with the oceanic information enables precise weather to forecast up-to 20 hours prior. The spectral information allows Our forecast to keep on getting precise as we get closer to the time. The strong neural-network-based data analytics algorithm proposed offers a real-time prediction of weather at the defined location.

Value Proposition

The unique selling proposition of BhuGoal is:

- No capital investment on billion-dollar satellites and weather radar.
- Precise prediction of weather.
- API based access to weather of each rural village.
- Cost-effective access to the data
- No Infrastructure requirement (External Power Source)

Business Model

In India only, there are 110 Mn farmers, and the numbers extend to 580 Mn worldwide. Everyone seeks precise weather monitoring at their farms. The paying capacity of 10% of these users (APIs are quite affordable to such populations) easily makes the API model workable with them. Hence, the 58 Mn farmers adopting the API access for the knowledge about their farms is the next phase target. While the current target is to quickly expand through $ 2.8 Bn (with CAGR 5.8 %) market from farm insurance, climate change assesses and governments of different countries, airport authorities and sports stadiums. While the data is important for all of the above domains, there are hundreds of B2B partners which will emerge in the fourth phase of expansions. While the numbers are favourable, the rain and weather are concerned with the number of businesses. Hence the target is to make-it-available to businesses in a similar manner to Google MAPS.

Current Traction

Currently with the help of Kisan Sanchar NGO BhuGoal devices are installed in 10 different villages near Patiala and weather data obtained from these devices are used to provide rainfall alert to the farmers of these

villages. The startup has received an award from the President of India for our innovation and funding of around USD 50K from different funding agencies like DST, Lockheed Martin, TATA Trusts, Texas Instruments etc.

How did MSH support you?

The support form MSH helped us to install more BhuGoal nodes in Patiala region of Punjab. Installation of more nodes will result in better training of the AI model thereby increasing the accuracy of the prediction. MSH support also helped us in capacity building which further increased our reach among the farmers and warehouse community.

Team Key Members

Kartik Vij, Rahul Kinra

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Tapfrsh

Retail Automation / Foodservice Automation **Bangalore/Karnataka**

Fermedicius

Startup Brief

Startup is working in retail automation space developing robotic, fully automated and contactless food & beverage preparation and retail solutions for hospitality & food-service industry in a post covid world. Tapfrsh is fully automated beverage preparation and retail solution for HORECA segment that integrates contactless ordering, preparation and retail of wide variety of freshly made hot & cold beverage products viz. tea, coffee, juices, dairy products, and bowl snacks.

Problem Statement

Beverage retail in India is largely unorganized and manual. Covid led disruption caused both organized and unorganized beverage retail players to re-consider strategy:

- Organized cafes reported 35 %1 loss in business, with 8 / 10 owners2 worried about business viability
- Unorganized juice sellers reported 80 % income loss3 with customer behavior changing
- 70 % leaders4 in F&B believe consumption behavior will change

Market Opportunity

Global Food Automation Market is sized at US $ 12.26 Billion1 with 52 %2 of the market segmented for beverage automation solutions. Spend by Food-service players on automation/technology solutions has increased 41 %, driven primarily by COVID induced shift to contactless technologies.
Within Asia Pacific alone, demand for beverage automation solutions is sized USD 2.1 Billion. In India there are an estimated 2 lacs automated vending machines for tea / coffee already. This installation base is growing by 46 %
Key enablers and tailwinds:
Consumer's focus on contactless and hygiene post COVID
Pervasive Digitization of Food Retail

- Increased pressure on food-service industry to innovate
- Growing awareness for health / wellness
- Rise of personalization and customization

Solution Concept

Tapfrsh is a robotic, integrated café unit that automates beverage retail workflow completely – contactless ordering via mobile device, fully automated robotic preparation, and delivery.
All Tapfrsh retail kiosks are IoT enabled, which means the business owner can remotely monitor orders, revenue, inventory, menu planning, customer analytics etc.
Tapfrsh kiosks are modular in design and can address context specific product portfolio of wide range products viz. tea, coffee, juices, shakes, dairy and bowl snacks. This allows business owner to customize the offering based on need of the context and maximize revenues.

Value Proposition

Our value proposition to current food service and beverage retail operators:

- Increased Revenue:

Taprsh provides simple plug-n-play solution to existing food-business that allows increased income from get-go with a selection of 50+ product SKU's. Result from previous pilot: 170% total revenue increase from beverage sale, 130 % increase in AOV.

- Reduce Costs:

Tapfrsh saves on space by 10x (20 sqft kiosk vs 200 sqft café), 6x on man-power costs, and 3x in set-up costs compared to a brick-and-mortar café establishment.

- Reduce Risks:

Zero contact robotic preparation, ensuring best-in-class hygiene and contactless compliance and automated cleaning and sanitization

Business Model

Our business model is to provide Tapfrsh technology platform-as-a-service to existing food-business operators with:

- Monthly Rental / Subscription for Hardware and IoT Platform
- Recurring sale of consumables
- One-time set-up fee

Current Traction (Word limit: max 50 words)

During SASACT Program, we have achieved fully functional modular technology platform (hardware + software), repurposed for food-service industry in a post-covid world.
2 pilots have been carried out with inbound interest and visibility from different sectors of foodservice industry

How did MSH support you?

Financial support from SASACT came at a critical time, allowed the startup to repurpose its existing technology for a post covid world. Early pilots were made possible to show our customers financial viability and solution's potential. Continuous handholding and timely help from incubator SINE helped formulate product thesis, draw roadmap, and make progress.

Team Key Members

Nitesh Kumar (Product & Sales) IISc, NLSIU Alum Ex. GE, Ex. Bechtel 3x Entrepreneur
Subhajit Biswas IISc, WBUT Alum Ex. Mercedez, Ex WIPRO, Ex HCL, 6 + yrs corporate experience

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INCREDIBLE DEVICES
Safe & Affordable Healthcare for All

Incredible Devices

Healthcare/Medical Devices **Noida, UP**

Startup Brief

Incredible Devices is a medical devices start-up with a mission to make Healthcare SAFE, AFFORDABLE & ACCESSIBLE for all; irrespective of Patients social status, economic class and geographical reach. Incredible devices deal in two domains: Cardiovascular & COVID -19 with thier innovative technologies CRS and ARS, respectively.

Problem Statement

COVID 19 patients need to be put on life supporting system such as Ventilators during course of treatment. There are multiple reusable/ Single Use items required to operate a ventilator. These accessories need to be reprocessed within 24 hrs.

Challenge: Presently all reusable/single use items are cleaned first with hands by technician, nurses or GDA and then sterilised using EtO prior to reuse upon new patients. Insufficient cleaning or human error leads to sterilisation breaches which later on cause cross contamination and lead to VAP or Fungal Infections. manually cleaning also poses infection threat to medical staff.

These parts cannot be ultrasonically cleaned as ultrasonic waves can break these parts.

Market Opportunity

Indian Market Size : >69,264 Hospitals India (Boons & Banes)

International Market : SAARC, US, Canada, Africa

Ventilators are needed in tier 2 and 3 cities. However, such cities lack infrastructure to support the same. ARS can help overcome this challenge.

Solution Concept

ARS (Advanced Reprocessing System) for Ventilator Disinfection is a revolutionary device which safely reprocesses essential medical devices like ventilator expiratory parts used on COVID Patients to ensure doctor & patient safety. COVID-19 patients need to be put on life supporting system such as Ventilators. There are multiple reusable/Single Use items required to operate a ventilator which need to be reprocessed. ARS resolves all challenges related with manual reprocessing. It is a computer aided fully automatic machine which works on a patented technique that comprises of 5 phases: 1. Water jet cleaning 2. Enzymatic cleaning 3. Chemical Rinsing 4. Disinfection 5. Drying, which cleans the essential medical devices with accuracy and precision. It eliminates human errors and is the cost-effective way to meet the demand of medical supplies amid COVID-19.

Working Principle:

1. Hydrotron action
2. Multienzyme Cleaning
3. High level disinfection

Value Proposition

1. Prevents Fungal VAP or HAI
2. Overcome Infra- Infection Issue
3. Staff Safety
4. Maximising Work Force Capacity
5. Improved Ventilations: Prevent issues of Low TV, Low PEEP, Low PIP etc due to debris in membrane.
6. 70% Cost Reduction
7. Instant Reprocessing
8. No stock Inventory
9. Reduce Ventilator breakdown

Business Model

Customers	:	B-2-B: Hospitals (No Competition Globally)
GTM	:	Direct Sales |Channel Partners | OEM | GeM
Indian Market Size	:	>69,264 Hospitals India (Boons & Banes)
International Market	:	SAARC, US, Canada, Africa

Current Traction

ARS has been clinically validated at Fortis Hospital and gained tremendous early traction from private and Govt hospitals. ARS has been installed at Fortis Hospital, Asian Hospital and has received order for 8 units of ARS.

How did MSH support you?

MSH helped Incredible Devices fact track the manufacturing of ARS for Ventilator Disinfection. Clinical Validation of the product, Team Building and production helped us reach the market at the right time which in turn will prove to be beneficial for the healthcare sector in preparing for the 3rd Wave.

Team (Key Members)

1. Mr. Vikram Goel – Project Lead
2. Ms. Rajwinder Kaur – Technical Advisor
3. Mr. Anurag Dua – Clinical Validation, Sales & Marketing
4. Mr. Nitin Kumar – Electronics

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ExactSpace Technologies

ExactSpace

Industrial (Power, Cement, Steel) **Bangalore**

Problem Statement

An industrial plant is complex and operates in an extremely dynamic environment, sometimes leading to performance degradation, unplanned failures, and expensive production losses. These plants generate millions of data points everyday which typically provide early signals of degradation but is very challenging for humans to analyse.
With Covid-enforced limitations, the situation has worsened as plant experts working remotely don't have access to live data to help make the best decisions. This has led to poor performance, multiple failures and numerous fatal accidents in the last 6 months which could've been avoided with a robust WFH infrastructure for Industries.

Market Opportunity

Industrial IOT and AI is a US$ 20 Bn market globally. ExactSpace Technologies focus on building very verticalized solutions for specific industries like; Thermal Power – US$ 1.3 BN Market Size; Oil and Gas – US$ 1.2 Bn; Cement – US$ 600 Mn; Steel – US$ 700 Mn

Solution Concept

Pulse is our cloud-based analytics platform which uses advanced Artificial Intelligence to autonomously learn asset and process behaviour, predict asset inefficiencies or future failures and help asset owners fix issues in time with deep domain diagnostics. Our key differentiator is the marriage of deep domain knowledge with cutting edge AI to achieve our goals! We have spent more than three years in deep collaboration with our industrial expert co-founder to build Digital Twins (Asset Models) of over 50 types of assets that detect 1500+ failure modes.

Value Proposition

For our customers, Pulse creates an intelligent communication channel between the Asset and the operators. It condenses millions of data points each day into a handful of snippets of insights which help them prioritize actions to:
1) Reduce unplanned failures
2) Improve performance/Reduce carbon footprint
3) Enable plant workforce to collaborate to troubleshoot issues, especially during the Covid times

Business Model

Our business model is around selling an Industrial AI platform with deep domain expertise. More than 80% of our revenues come from product license with 20% coming from customization components.
We sell our platform directly to end industrial plants (like Power Plant, Cement Plant) or to OEMs (manufacturers of large industrial equipment like Turbine, Boilers, Compressors, etc).

Current Traction

Over the past 3 years, we have onboarded 58 plants globally (India, China, Finalnd, Argentina) from across Power, Cement and Steel industries. One of the largest energy digitalization projects runs on our platform and our customers include BHEL, ABB, Hindalco, Ultratech.

How did MSH support you?

MSH's SASACT fund was a big boost to rapidly strengthen our solution and scale it up in the market. We were able to deploy our solutions at scale with a customer and are following that up with many more. That apart, the recognition from MSH has been a strong talking point for us with our customers.

Team (Key Members)

Rahul Raghunathan, CEO
Arun Jose, CTO
Boben Anto, COO

MedPrime Technologies

medprime

Telemedicine | Telepathology **Mumbai, Maharashtra**

Startup Brief

MedPrime Technologies, a healthcare startup from IIT Bombay, has developed the latest technology in digital microscopy for diagnostics, having a significant impact in making tests more accessible and affordable in rural areas. The technology is also capable of making expert pathologists available to even remote areas through telepathology. The products and allied services are offered under CILIKA® and MICALYS ™

Problem Statement

Digitization and telemedicine which have taken over radiology, biochemistry, etc. have not yet reached microscopy. As a result, it requires that the sample be observed directly by the pathologist through a microscope. There are only 5500 practicing pathologists in the country and most of them are concentrated in the cities and large towns. This often leads to delegation of duties to technicians causing mis diagnosis and higher turn-around times for reports owing to the need to physically transport samples to cities for analysis.

Market Opportunity

Diagnostics: TAM – USD 400 Mn in India; SAM - USD 267 million (1/3rd of TAM); SOM - No other similar solutions in the market; Can be captured with fast action. Total microscopy market (non-diagnostics market such as biological sciences, research, etc.): USD 1.1 billion USD in India, the global digital pathology and image analysis market is also growing at a CAGR of 12.5% and is expected to touch 1 billion USD in 2025.

Solution Concept

MICALYS is a multifunctional instrument with multiple modes – it can be used as a whole slide scanner, it can be used as an AI powered smart microscope that does analysis, it can be used as a telepathology tool for doctors to view and consult on samples remotely and it can also be used as a regular manual microscope. It is suitable to the needs and budgets of all customer groups due to its flexibility in operation and its pay-per-use pricing model.

Value Proposition

MICALYS is a game changer since it is AI integrated and will increase in efficiency and accuracy over time. Secondly it provides horizontal integration of a wide range of functions in a single machine, which does not exist currently. Each instrument available in the market performs one function or works on one type of sample only. Thirdly, the subscription model will make it easily affordable to standalone labs, which find it economically unfeasible to invest large amount of capital in multiple instruments. the hardware will be provided for a minimal cost, and the user will be charged depending on the software modules they require, and the number of tests per month and so on.

Business Model

MICALYS automated microscopes will be provided for free, and the customer will be charged per month according to the software modules subscribed to, the number of tests done, etc., minimizing the capital expenditure to labs. They will be sold through a combination of direct sales and network of medical device distributers.

Current Traction

MICALYS is still undergoing testing, however a simpler non-automated version of this product has already been launched in the market in 2017, under the brand name CILIKA digital microscopes. CILIKA microscopes are a combination of smartphone technology with microscopy and has generated close to INR 3 cr revenue since its launch.

How did MSH support you?

MSH has supported by providing us with the funds to do the R&D needed for this project. The various seminars conducted by MSH from time to time on various aspects of product development and taking a product to the market have been quite helpful.

Team (Key Members)
Samrat, Greeshma Unnikrishnan, Mahesh Kumar Rathor, Binil Jacob

Blackfrog Technologies

Healthcare/Medical devices **Manipal, Karnataka**

Startup Brief

Blackfrog Technologies Pvt. Ltd. is a Manipal, KA based technology startup company that seeks to improve the efficiency of immunization supply chains. It has developed patented technologies for precision cold-chain and vaccine traceability systems with support from BIRAC (DBT) and leading impact investors in the nation including Venture Centre (NCL, Pune), CCAMP, FORGE Coimbatore and Social Alpha to provide logistical support in the last-mile delivery of vaccines.

Problem Statement

Iceboxes, that play the predominant mode of last-mile vaccine transportation for COVID-19 vaccines, are not fully equipped. Since they have no mechanism for temperature control and regulation, there exists the risk of accidental freezing and/or thawing, rendering the temperature-sensitive vaccines inefficacious. This is especially likely when vaccines are to be transported to distant and remote locations with harsh weather conditions. As a result, even when vaccines reach their destination in time, there exists the prospect that they have been compromised. Additionally, the lack of reliable temperature monitoring capabilities in iceboxes makes it challenging to determine the efficacy of the vaccines in advance. It is possible, then, that a proportion of the population receives inefficacious vaccines, significantly impeding immunization efforts.

Market Opportunity

An increase in demand for cold storage solutions from pharma and other segments is expected to help the Indian cold chain market to post a 17 per cent growth in 2021 to Rs 1.7 trillion, according to market research firm IMARC Services.

Solution Concept

Emvólio is a portable, battery-powered refrigeration device that will strictly maintain any preset temperature for over 12 hours for last mile transport of vaccines+. Emvólio's 2-litre capacity enables it to carry 30- 50 vials, which is standard for a daylong immunization campaign. Further device capabilities include continuous temperature monitoring, location tracking, state of charge indication, communication with headquarters via live tracking, and vital statistics for improved coverage.

Value Proposition

Emvólio's patented technology ensures that all contents in the cold chamber are blanketed in strictly temperature-controlled air. The underlying refrigeration mechanism is solid-state cooling with a smart PID (Proportional Integral Derivate) controller, which guarantees precise temperature maintenance without the risk of noxious refrigerant leakage or cross-contamination. The lack of motors/compressors or any moving parts enables low maintenance operation. The unique design of Emvólio promises: Uniform cooling, Minimal freeze-thaw cycles.

Business Model

Blackfrog Technologies has developed Emvolio- a patented technology in rapid cooling, for the last-mile delivery of critical pharmaceuticals like vaccines. This portable medical-grade refrigeration system is now being fully manufactured in India, to support COVID-19 vaccination efforts across the nation and beyond.

Current Traction

So far, Emvólio has been deployed and is being used in 5 states of India- Karnataka, Tamil Nadu, Bihar, and Manipur. It has fulfilled over 250+ units across India serving remote and rural locations in ensuring efficacious vaccines reach the masses.

How did MSH support you?

Funded us through SASACT for procurement of raw materials.

Team (Key Members)

Mr. Mayur U Shetty (Chief Executive Officer), Mr. Donson D'Souza (Chief Operations Officer), and Mr. Ashlesh Bhat (Chief Technical Officer)

Fabheads

Manufacturing **Chennai, Tamil Nadu**

Startup Brief

Fabheads is a deep tech startup founded in 2015 who has been developing several new automated manufacturing technologies in India. Fabheads vision is to make carbon fiber part manufacturing solutions more accessible and economical to Indian manufacturing units. They are headquartered in Chennai with an DSIR recognized R&D unit and a manufacturing unit.

Problem Statement

Fabheads is working on solving the problems associated with Carbon fiber parts manufacturing. Traditionally this process has been very time consuming, labor intensive and unreliable. This results in the produced parts being very expensive and there is a lot of material wastage when making carbon fiber composite parts.

Market Opportunity

There is a huge market opportunity as many industries are starting to adopt carbon fibers and other composite materials into their products to make them high performant, light weight and strong. Carbon fiber parts have hugely gained traction in the drones market with manufacturers looking to make their drones stronger and fly longer.

Solution Concept

Fabheads has developed technologies that make carbon fiber parts manufacturing more economical and reliable using automated technologies. One of the solutions developed by Fabheads is a 3D printer that can print with continuous carbon fiber material. This allows the user to print parts stronger than aluminum without investing in costly toolings and skilled manpower.

Value Proposition

Fabheads technologies offer great value to the end user. It cuts down the time and money that is required to get the carbon fiber parts made and also makes the part production more reliable due to the automation of the manufacturing technology. This makes carbon fiber material more accessible to new companies who are looking to make high performance products. Also leveraging on the additive technology Fabheads is able to cut down the wastage that happens in carbon fiber parts production from 30% to a mere 5% or less.

Business Model

Fabheads' model for business to sell their 3D printers to a wide range of industries ranging from automotive to robotics to aerospace. Fabheads is also the manufacturer of raw materials for these printers and would be selling this raw material to its users.

Current Traction

Today, Fabheads is using its technology to provide fabrication services to its clients. They have gained great traction in the drones segment and have serviced several drone clients from providing end to end design and manufacturing services to providing immediate spare parts. This has allowed us to showcase our technology and will be a foundation to sell our printers to these potential clients.

How did MSH support you?

MSH has provided a great platform for us to speed up our product development and push our product into the market.

Team Key Members

Dhinesh Kanagaraj, Founder & CEO
Abhijeet Rathore, Chief Technology Officer
Nivas Vallavan, Chief Business Officer
Akshay Ballal, Chief Business Officer

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MEITY STARTUP HUB

Combat Robotics India Private Limited

Robotics/Medical **Pune**

Startup Brief
We are a defence robotics company who started working in Respirator segement in the covid as a collective effort for fight against covid.

Problem Statement
Covid patients so they don't enter ARDS situation, we have built a low cost and reliable respiratory aid for patients which can give them ability to fight against Covid

Market Opportunity
Private and Government Hospitals
Discharged Patients post Covid Recovery who require oxygen therapy
Small clinics in Tier 2 and Tier 3 city hospitals

Solution Concept
We are building a Respirator which can act as boon to the patients in case of low oxygen levels in the Results of tests conducted are approved in terms of accuracy for I/E ratio, Tidal Volume, Breath Profiling
Approved by a pulmonologist and anaesthesiologist with a test certificate for functionality
We have actually taken a reference of a full-fledged ventilator to calibrate the pressure , flow sensors values

Value Proposition
Low-cost mass production ready
Portable and handy
Low power consumption 10-20W
Controlled Breathe Rate & Air Volume
Forced Normal air/oxygen
Full medical grade body
Ac supply with optional battery back up 4 hrs.
Provision to powered by automotive battery
Easily replaceable Ambu bag fitting for sterilization
Filters to avoid infection

Business Model
The Business model is to do direct sales of the product in th market through a established channel. Primary our market segement is teir two and teir three cities

Current Traction (Word limit: max 50 words)
We are stuck at Certification stage due to ecsloure problem design issue
Number of users - Letter of Interest received from DICCI and interest shown by NDMA
Overall scale achieved – Manufacturing feasibility for 100 nos

How did MSH support you?
Meity start-up hub has given access to funds in the first level tocomplete the product development and we also have reserved fund for the production of the product

Team Key Members
The key Team members are as follows
Ganesh pandit Suryawanshi
Hadi Saudagar
Wahab Sheikh
Bhagesh lokhande
Nakull illwae

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MEITY STARTUP HUB

EzeRx Health Tech

Healthcare | MedTech **Bhubaneswar,Odisha**

EzeRx™ EASY FOR PRESCRIPTION

Startup Profile

Founded in 2018, EzeRx is a Med-Tech & BioTech startup committed towards providing innovative solutions by manufacturing highly advanced medical devices. Primarily focus on non-invasive screening device which are useful for the bottom of the pyramid for affordable and accessible healthcare.

Problem Statement

Delay detection of Diabetes, anemia, liver, kidney and lungs problems resulting in loss of more than lacs lives in every year

Market Opportunity

Preventive care is the need of hours now. In B2B space we identified target groups of Governments (State and centre), private hospitals, clinics, health insurance companies, Pharmatutical companies, CSR/ NGO partner and corporate.

Solution Concept

EzeCheck is a non-invasive portable device which can detect blood sugar, anaemia and predict kidney, liver and lungs problems within less than 10 seconds and without withdrawing a single drop of blood from human body.

Value Proposition

- Non-Invasive
- Affordable
- Accessible
- Instant result
- IoT Enabled
- Easy to Operate

Business Model

Our business model is a SaaS model, we called Device as a service model where Rs. 35,000/- we charge as starter package of 1000 test and device free. After initial consumption of 1000 test, he has to recharge next set of subscription from the mobile app or portal.

Current Traction (Word limit: max 50 words)

We had completed pilot project with three state governments and deployed initial around 150 devices into the market. Current deployment in primary health centre, private hospitals, clinic, health insurance companies, CSR/ NGO partner and several corporate.

How did MSH support you?

MSM funds support us to manage initial working capital to deployed products into the markets. Understanding the needs and initial testimonial is very important for us to grow.

Team Key Members

- Partha Pratim Das Mahapatra - CEO
- Chaitali Roy – CTO
- Sudip Roy Chowdhury - CIO
- Joy Banerjee – AVP Technology
- Komal Agarwal – Lead Clinical trials
- Debaditya Dutta – Lead Business development

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MEITY STARTUP HUB

Insightzz

Mumbai, Maharashtra **Artificial Intelligence | Computer Vision**

Problem Statement

+ Error rate of visual inspection of components in the manufacturing industries is prominent. This quality check process in manufacturing facilities involves intensive labour and also is time consuming
+ These manual dependent QC methods are highly prone to human errors, and data collected on existing scenarios suggest the same.
+ Zero percent defect should be maintained every time these suppliers dispatch a batch of components, as a defective component in the dispatch lot will affect the contractual relationship between these suppliers and their OEMs.

Market Opportunity

+ Manufacturing sector is on a high growth rate and is poised to achieve a potential of 1 Trillion USD by 2025.

Solution Concept

DRISHTI is an integrated technology product capable of performing a wide range of visual quality inspections with built-in algorithms for identifying specific objects, defects and their parameter adherence. The system can be easily integrated with custom-built algorithms as needed with client-specific use cases. Also, it has a supporting set of software allowing self learning and self data acquisition features

Value Proposition

+ Plug and play design for visual quality inspection of products with easy hardware and software setup enabling the client's team to deploy and use our product directly
+ Easy configuration to detect custom defects which can be done by the client's team with remote assistance.
+ Reduces the delays for deployment at the time of pandemics/emergency situations where travel is a constraint
+ Cost advantage to the client with remote deployments
+ Customizable algorithm compatible with the product for any visual inspection and asset management use case.

Business Model

+ B2B - Manufacturing Industries

Current Traction (To be Verified)

+ Manufacturing: Ceat Tyres, Schneider Electric, Bajaj Auto, RPG group, KSH International, Asta India Limited, Precision Wires, Venus Wire, Century Metal Recycling.
+ Institutional : Indian Railway
+ Oil & Gas: Bharat Petroleum Corporation Limited

Team (Key Members)

Manish Choudhary
+ Founder & CEO
+ Business Development & Solution Architect
+ BPCL,CEAT : 8 years experience

Sabari Girish Nair
+ Product Innovation Head
+ Innovation, Product development & Solution Architect
+ MBA-IT, BTech- CS
+ E&Y, TCS : 8 years experience

Vikram Jethmal
+ Chief Technical Officer
+ Product Development & Technical Projects lead

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MEITY STARTUP HUB

Learning Matters Private Limited

EduTech **Bangalore, Karnataka**

Startup Brief

We are an edtech company with a fast-growing customer base. We use highly scalable, innovative virtual, autonomous voice teacher Tara that our passionate team of educators and engineers built using AI and voice technology. This solves the problem of poor learning outcomes of students due to lack of qualified teachers in school. Total available market is 30 Cr. learners in K12 sector in rural and semi urban India.

Problem Statement

70%of middle school children cannot read text in English or do basic arithmetic due to the poor quality of teachers and teaching methods. Additionally, Covid lockdown since Mar 2020 has caused huge learning gaps, especially for rural and semi urban school students. This has only compounded the earlier existing problem of poor learning outcomes.We focus on improving learning outcomes, building language skills, improving teacher capabilities with tech and non-tech tools.

Market Opportunity

Total available market in K12 sector is about 30 Cr. students and 1 Cr. teachers. Improving learning outcomes for this population is a massive opportunity. 60% parents pay between Rs. 15k - 75k per year as school fees. If they can spend just about 1 to 4 % of that annual fee, it can substantially improve their learning outcomes. As future expansion, voice is a great technology use case for blind, dyslexic learners; for corporate training programmes; for English learning market outside India.

Solution Concept

We deliver learning programmes using voice technology (speech to text and text to speech), combined with AI, delivered on Amazon Alexa Echo Dot and on smartphones. Tara can be used in a classroom setting with teacher playing a central role, Tara acting as an able teaching assistant. It can also be used by students as an optional, extended practice mechanism at home on smartphones.
The current programme enables continuous, any time, immersive learning of English in judgement free, and a high-quality learning environment. Hardware costs are about Rs. 5 per student per year.

Value Proposition

Highly affordable technology that is artificially intelligent; this can bring about great learning outcomes for students and great changes in the lives of majority of school teachers.
Learning happens in a non-threatening, non-judgemental and immersive environment.
Hardware costs are really low. (< Rs. 5 per learner per year) Distribution of software is seamless and friction free. Effectiveness of the programme is very high.

Business Model

India K12 sector has a large untapped market. Rs. 1000 per learner per year with 50 Lakhs learners means an annual recurring revenue of Rs. 500 Cr. This could be achieved in 3-5 years. Other areas to expand include: learners with disabilities like blindness, dyslexia; expanding to international languages; corporate training programmes; porting to other platforms like
Google, Almond.

Current Traction

In the last 2+ years, we have run our programmes and impacted positively about 10k students from 130 schools in Tamil Nadu, Karnataka, Kerala, Jharkhand, Orissa and Maharashtra. Our customers include a number of affordable private schools, schools sponsored under CSR schemes (such as by Tata Technologies, Ramco Cements, Klorofeel Foundation among others).

How did MSH support you?

MSH has provided (1) great networking opportunities (2) financial support.

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MEITY STARTUP HUB

Aindra Systems

AiNDRA

Telemedicine | Telepathology **Bangalore, Karnataka**

Startup Brief

Aindra is an Artificial Intelligence driven company focused on creating Point-of-Care diagnostic solutions for fatal illnesses. The vision is to save lives through early detection of critical illnesses at the point-of-Care by democratizing access to quality healthcare, through the use of deep technology.

Problem Statement

In the absence of adequate capacity and resources for carrying out large scale testing of Covid-19, it is more important for a rigorous screen mechanism to call out the infected and break the chain. With such a large population the need for such testing and screening mechanisms made available at very affordable price points that do not create friction in getting tested, becomes critical. Though there has been a higher extent of tests being carried out, combined with the tighter implementation of containment, quarantine and contact tracing measures, it is still insufficient.

In addition to this, the ability of our healthcare system to effectively deal with the rising mortality rates also hinges on the ability to correctly predict the risk of mortality for an individual depending on any pre-existing lung damage, since the lungs are the target organ for the COVID-19 disease.

Solution Concept

Solution includes off-the shelf, portable digital x-ray imaging systems connected to an AI/ML cloud server to analyse the digital images & classify covid infected suspects from uninfected healthy people; a tele-radiology platform to connect with radiologists to access the algorithms output, view the images and make the final inference at the quickest possible time.

The complete digital solution augments the expert's throughput and the cloud based tele radiology platform provides accurate, qualitative, faster, and affordable solution for covid-19 screening and also risk stratification by detecting multiple chest abnormalities.

Value Proposition

A simple, easy to use, portable, point-of-care, zero-contact, faster turnaround time for results, no dependencies of consumables and the service 50% lesser than the existing testing process are the notable value propositions that the innovation brings.

Business Model

The business model comprises of providing a hybrid model of a Capex and an Opex based commercial model to the customers.

Current Traction

Aindra Systems are in discussions with multiple big enterprises for strategic collaborations and partnerships and with a reputed medical college to collaborate and extend the platform for multiple radiography-based condition detection.

How did MSH support you?

MSH supported us to extend our AI engine to start using Xray images for detection of multiple chest related conditions through the SASACT program.

Team (Key Members)

Aindra Systems have team members spread across functions of Product Design, Mechanical, Electronics, Data Science, Software engineering and QMS.

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MEITY STARTUP HUB

LVL Alpha

Defence, MedTech, HealthTech **Pune, Maharashtra**

Startup Brief

lvlAlpha, India is an early Stage Defence technology startup building automated solutions for operational efficiency and human safety, primarily for Defence Sector.

Problem Statement

Prevention of Cross-Contamination between patient and outside environment through Contact, Droplet, Fomite & Airborne transmission during Human Trauma and Disaster Evacuation. This issue is especially pertinent during Chemical or Biological Disaster, where there is a lack of Portable Sterile Medical Grade environment. This results in failure to safeguard affected/infected human lives in disaster circumstances.

Market Opportunity

There is a lack of Portable Sterile Medical Grade infrastructure during Natural or Manmade Disaster relief, with India requiring 45k+ such devices to be available for temporary hospitalisation and transportation. Other markets include portable sterile environments for Hospitals and Ambulances, where 50k+ such devices are required. This brings the total market in India to USD 194 million.

Solution Concept

CBRN-PIC, is a portable battery operated Patient Isolation Capsule™, which provides sterile medical grade air filtration and air circulation system for isolating and temporary hospitalisation of affected or infected patients. We are now ISO-13485:2016 Medical Device Certified company for design and development of the CBRN-PIC medical device.

Value Proposition

- Biosafety Level IV medical isolation - Provides 99.97% safety against any known pathogen or Dangerous chemical compound, keeping both the patient and the health provider safe.
- Lifesaving infrastructure in Trauma, Natural and Manmade disasters, where normal medical sterile infrastructure and power becomes non-existent.
- Upto 70% faster Disinfection, decontamination, and patient transit after use, hence ready for another patient within minutes.
- Remote Patient and Device monitoring allowing tracking of patient and device use from any location.

Business Model

Business Type: B2G and B2B initially and B2C for commercial versions.
Sales Channel: Direct Sales (majority), Referrals (Inter-Dept. References), Online Tenders
Go-to-Market Strategy:Direct Orders through Joint Command of Indian Defence procurement, GeM listing for NDRF and other Govt. Agency. Sales partners and Manufacturing licensee in Commercial Product versions for Hospitals and Ambulances.
Target Customers: Defence Sector, National Disaster Relief Agency, Hospitals, Ambulance Services.

Current Traction

Field Demonstration with National Disaster Relief Force and Indian Army, CME - Dept. of CBRN response completed.
Expression of Interested and demonstrations with Deenanath Mangeshkar Hospital & Research Centre.

How did MSH support you?

Through the support of MeitY Startup Hub, lvlAlpha, India was able to be ISO-13485 Medical Device certified for design and development of the Patient Isolation Capsule™. lvlAlpha has been able to generate, One Patent Application 202021028485, TWO other patent conversions Patent No. 2342/CHE/2013 and 2212/CHE/2013 registered, Trademark no. 4950921, 4950923 and 4950924 and Design Copyright no. 342121-001. With the support provided by MeitY Startup Hub, we have been selected for the National level Industrial opportunities such as the CBRN-PIC was showcased in the CII e-Compendium of Design, 2021 and as an exhibitor at Defence Expo 2021, Chennai.

Team Key Members

Aditya Mishra, Managing Director, Ex-GoI(PSU)
Kartik Mandaville, Deep Tech Advisor, CEO, Springrole LLC, US
Prof. B.N. Karkera, Senior Technology Advisor

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MEITY STARTUP HUB

Abhaya Information Technology LLP

Healthcare **Mumbai, Maharashtra**

Startup Brief

Abhaya Information Technology is a young company with an eclectic mix of team members consisting of pulmonologist, product specialist and technology experts.
Abhaya inspires to be the one stop print for intelligent data that will change a patient's life for the better and enable the healthcare industry to take data driven decisions.
We are India based Analytical Start up with the vision of providing accurate analysis of the patient's health and providing Make In India devices to the world.

Problem Statement

- 12 million people suffering from Atrial Fibrillation a heart condition in the US alone
- Reduction in Non-Optimal checkup schedules and follow ups
- Covid19 and post recuperation demands higher monitoring of lungs and heart
- Real Time vs. Post Monitoring
- Manual vs. AI real time Analysis
- Cost of Healthcare

Solution Concept

Patient

- Wearable Lung & Heart Monitoring Device
- Measuring the Lung sounds, ECG & HR
- Devices integrated with patient side of Advait
- Home Health mobile App via Ble 5.0
- AI algorithm working in the background detecting
- heart & lung abnormality

Doctor

- Logs into the app using doctor login & has access to the data real time and historically
- Data saved in the Encrypted HIPAA cloud via wifi
- AI driven alerts to the doctor on individual threshold level breach.
- Telemedicine video calling doctor-patient incl screen sharing

Value Proposition

HeartBeats – Our Real Time Remote Monitoring Device

Benefits:

- Real Time 24/7 ECG Monitoring
- AI -Real time abnormality detection
- Cloud based storage
- Data driven analytics of a patient
- Alert driven
- Re-Usable, Re-chargeable

Phefda - Our Lung Monitor

Benefits:

- Real Time capture of Lung sounds
- AI -Real time abnormality detection
- Cloud based storage
- Data driven analytics of a patient

- Alert driven
- Real Time & early detection of abnormalities increases potential of saving lives.
- Replacement of battery driven Manual analysis Holter Monitoring systems

Business Model

One time sales of device and monthly subscription of using the app.

Current Traction

- Successful Implementation in Ruby Hall Clinic & Sahayadri multi-specialty hospital Cardiologists.
- MOU signed with Ruby Hall Clinic to provide telemedicine and real time remote monitoring in rural and Urban areas of Maharashtra.

How did MSH support you?

Grant provided has been invaluable in completing the projects on time.
The leverage of being a Govt Funded start up is very useful in marketing the product to clients

Team (Key Members)

Tarak Nagaraj BE , MBA SP Jain
+ CEO & Chief Innovator
+ Extensive experience in managing hospital & administration operations and quality systems in a multi-site environment; expertise in developing & executing quality hospital administration strategies

Dr.Sanjay Pathare MBBS , MBA, Mphil
+ Advisor
+ Extensive experience in managing hospital & administration operations and quality systems in a multi-site environment; expertise in developing & executing quality hospital administration strategies

Paul Rodrigues BSC Computers
+ CTO and Extensive experience in building AIOT devices and Technology

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MEITY STARTUP HUB

EyeRov

Robotics **Ernakulam, Kerala**

EyeROV™

Startup Brief

EyeROV is a marine robotics company providing safer and efficient solutions for critical underwater infrastructure inspections. EyeROV designs & manufacture industrial-grade underwater drones/ROVs which can help the asset owners do the inspection of their structures providing high-quality data with minimal risk. EyeROV's clients include NPOL (Research Lab), DRDO lab, BPCL, Mumbai Port Trust, Adani, KSEB, Indian Railways, etc... EyeROV won the IIGP 2018 and was selected as the top 8 industrial startups of India. The company has reputed investors like GAIL, BPCL.

Problem Statement

There are hundreds and thousands of structures like bridges, dams, and many engineered Oil Rigs, submerged pipelines, Submarine data, and power cables are beneath the surface and beyond the sight - which plays great strategic importance. Just the inability to do a visual inspection of these structures and depending on divers for all operations (putting divers life to risk) has been a great cause for national and personal damages and losses of billions of rupees annually and also many lives. Also during inspections, a lot of generated which are manually evaluated and reported in paper/hardcopy reports without any predictive analytics.

Market Opportunity

700 dams and over 3000+ bridges need an inspection in the next 2 -3 years which has a market size of INR 250+ Cr. Currently, all dam and bridge inspection (railways) are being recommended to use robotic inspections.
Globally ships need to inspected regularly as hull biofouling leads to 20% extra fuel consumption and thereby increased carbon emissions.

Solution Concept

We are creating an easy to use, highly controllable underwater drone - EyeROV TUNA. EyeROV TUNA is an economical and smart solution for underwater inspections of structures. We are also developing high computing data analytics software for providing the 2D/3D real-time picture of the underwater structure for ease of analysis and archiving. These capabilities are crucial to carrying out an effective inspection of strategically important structures. Above this utilising an underwater drone for inspections is less risky and simple in many situations than the conventional divers.
We want to be an enabler in execution and maintenance of underwater infrastructure, which is currently lacking due to extensive human dependency in such hazardous/riskier situations.

Value Proposition

Our unique value proposition to the customer is the Intelligence in our Data Analytics platform powered by computer vision platform. The data/video which is usually hazy/turbid are now given in high quality in the shortest possible time. We have developed our EVAP- EyeROV Visualization and Data Analytics Platform which is used for delivering output to clients.

Business Model

EyeROV offer its solutions in two models

- Sales of Customized ROV's for Defense, Disaster Management, Research Labs
- Underwater inspection services using ROV for Dams, Bridges, Ports, Ships, Oil & Gas Industry etc

Current Traction

Our clients include NPOL (Research Lab), DRDO lab, BPCL and KSEB, Indian Railways, Mumbai Port trust etc. We executed the pilot projects for the reputed firms such as Adani Power, Coastal Police, BSF, Kerala Fire and Rescue, Kerala Police, Assam Fire and rescue etc.We already having paying customers who are owning assets like ports,

dams, river crossing bridges, ships, underwater pipelines, etc like DP World, BPCL, Indian Railways, KSEB, Kerala Water Authority, Mumbai Ports,Fire & Rescue Department-Kerala to name a few.

How did MSH support you?
EyeROV is a marine Robotics start up actively engaged in the space of under water asset inspections. SASACT Fund helped EyeROV with crucial funds for development of our Product during some of the tough times for start ups due to COVID Pandemic. This product will enhance our capabilities to reach to different markets and our and furthermore improve growth potential.

Team (Key Members)

+ Johns Mathai - CEO, Co-founder
+ Kannappa Palaniappan - CTO, Co-founder

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MEITY STARTUP HUB

LectureNotes Technologies Pvt. Ltd.

Education Technology **Bhubaneshwar, Odisha**

Startup brief
Lecturenotes is a community driven EdTech platform catering to undergraduate student which acts as a notes repository aggregating lecturer driven content & peer to peer notes. Lecturers are also provided a platform for facilitating virtual classrooms with doubt resolution and peer learning via our flagship product Lectureroom. With a strength of 1.8 million students and 56000+ teachers along with 1,00,000+ notes, we are one of the largest notes marketplaces in India available pan India . Started in 2017, Lecturenotes has been a major part in a student's undergraduate journey so as to even generate insights based on a student's learning pattern in lecturenotes & Lectureroom and assist him in revision, feedback & performance improvements .

Problem Statement (Word limit: max 150 words)
To develop a holistic remote learning solution for enabling education in a post covid scenario .

Market Opportunity (Word limit: max 200 words)
The online tutoring market is supposed to be worth USD 9 Billion by 2022. Currently there are very few players who operate in this place, but none provide a classroom like environment which aids teaching.

Solution Concept (Word limit: max 200 words)
The solution we have built a virtual classroom software that digitalizes the physical classroom experience and enables remote learning, named Lectureroom. It encapsulates all aspects of classroom learning enabling better delivery of content between teachers & students and induces peer to peer learning. The virtual classroom consists of Live classes, secure content distribution system, assignments ,quizzes and automated attendance system along with detailed insights being generated on every students in the form of academic reports . the classroom will also be able to generate insights based on the student mood, hence helping the teacher understand the class better.

Value Proposition (Word limit: max 200 words)
The Lectureroom is an easy-to-use virtual classroom platform which is packs in all aspects of classroom learning and enables digitalized education. From Live teaching to notes distribution, assignments to tests and quizzes, notice boards, the Lectureroom cover it all. Peer to peer interaction is enabled via intra class chat and insights are generated from students to enable better learning by Teachers.

Business Model (Word limit: max 100 words)
We have a subscription business model with subscription amount varying according to number of teachers, custom feature add on, batch size and white labelling. Lecturerooms start at Rs 2999 per Lectureroom and Rs 999 per teacher.

Current Traction (Word limit: max 50 words)
400+ classes being held on an average.
Catering to 5+ top institutes/universities and foreign MNCs

How did MSH support you?
MSH assisted us in getting the SASACT grant of 25 lakhs for developing Live Lecture Alertness tracking system in a remote learning solution.

Team Key Members
- Srustijeet Mishra
- Aaquib Hussain
- Upamanyu Chatterjee
- Shouradeep Chakraborty
- Md Fazal Mustafa
- Chandi Prasad Mishra

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MEITY STARTUP HUB

Bariflo Labs

Agri Tech | AI | IoT **Odisha**

Startup Brief

The mission of the startup is to rejuvenate surface water bodies by using robotics, AI, IoT and core principles of fluid dynamics. As surface water bodies are in depleting state and cost of its maintenance is cumbersome, we have taken up the issue to solve it by developing an intelligent floating agriculture cum waterbody management system. The idea is to utilize the waterbody as a revenue generating source for farmers, societies, SHGs so that more water bodies will recharge ground water and reduce the stress related to groundwater depletion in cities and agrarian ecosystems.

Problem Statement

The profitability of traditional shrimp aquaculture farmers is low because the technology available to maintain water quality for profitable shrimp quality is expensive and not in sync.

Market Opportunity

Our Target market is the Indian Shrimp aquaculture space. Currently Shrimp aquaculture acquires 1,70,000 Ha of Land and it has clocked a CAGR of 12% over the last 20 years. Each Ha of culture land requires 12 nos of existing aerators, each of which is replaced every 5 years. About 2,50,000 estimated nos of aerators are being sold every year in India which accounts upto a value of 7000 Cr of aeration systems being sold annually. Even if our system has 2% acceptability, we will be doing a business of about 28 Cr annually.

Solution Concept

Innovation in aquaculture management system is:

1. Innovation in the device is aeration of a waterbody by considering sediment oxygen Demand (SOD). The aeration is a microbubble aeration that aerates by a mechanism at the sediment-water interface (SWI). This helps to reconstruct the oxidized layer. One module can aerate up to 1 hectare of the waterbody.
2. Innovation in the device is feeding carps in hunger and growth of carps at the sediment sediment-water interface (SWI). This will reduce feed wastage and save feeding expenditure. Further, it delivers drugs in a mechanism at the SWI for reducing viral and bacterial infections if any.
3. The device will provide a complete three-dimensional picture of the waterbody of crucial water quality parameters on a real-time basis and also from the data analytics platform the feeding, aeration, drug delivery, and aeration process can be directive for the farmers. Also, it will help identification of disease in shrimps and growth in very early stage.
4. Regular treatment of water by recycling water at the sediment water interface by usage of banovalent bacteria and micro-algae.

These devices are integrated based on AI-IoT and DSS platform to provide end-end solutions. This solves the problem of unavailability of affordable technology to maintain water quality for getting a profitable yield as it increases the profitability and harvesting by at least 50%.

Value Proposition

Developed an AI-IoT waterbody management system ensures at least 50% more profit for aquafarmer than existing solutions. The framework will be a one-stop solution for the farmer, where everything will be automated, which is 60% less energy intensive, 80% reduces the labour cost, 30% saves feed cost, and also increases the profitability of farmers by at least 50% also reduces pathogenic growth.

Business Model

Our proposed model is lease based model, where we provide our multistage floating agriculture platform, sediment aeration, and monitoring system in lease based on annual subscription with maintenance for five years and after that we charge for only annual maintenance. Based on the nutrient at the sediment water interface we calculate approximate cost. We suggest floating agriculture at the top of the water surface and fisheries harvesting in water bodies for organic production.

Current Traction

We have started piloting with Shrimp farmers in Bhimavaram, Nagapattinam We have started piloting with BDA, Bhubaneswar, GHMC Hyderabad for waterbody rejuvenation.

How did MSH support you?

MSH supported us on mentoring to develop the control systems through mentorship. It has also helped us to identify the market segment and pilot with customers. We have extended our business potential length and breadth because of MSH.

Team (Key Members)

+ **Mrutyunjaya Sahu,**
  Founder
  (PhD [University of Sydney &University of Canterbury])
+ **Anudhyan Mishra**
  (B Tech NIT Rourkela)

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MEITY STARTUP HUB

Pupilmesh

Assistive Device **Bangalore, Karnataka**

PupilMesh

Startup Brief

PupilMesh develops technologies and solutions that help augment digital information into our physical world thereby reducing cognitive load and increasing individual productivity and safety

Problem Statement

Enterprise front line workers on shop floors and on the field have to constantly juggle between manuals, documentations and digital handhelds for carrying out assembly and maintenance procedures. This reduces their overall efficiency and increases human errors.
This is also the case with professionals in healthcare and security where they have to constantly juggle between different gadgets and files which reduces their overall efficiency.

Market Opportunity

The global Enterprise Augmented Reality market is valued at USD 50Bn. With Augmented reality, enterprises are looking to build the next generation of factories that have increased safety and efficiency. Frontline workers are being empowered with AR solutions for easy remote assistance, digital workflow and IIoT monitoring.

Solution Concept

ARmor is a fully modular head worn Augmented Reality display system for enterprise applications. ARmor provides digital workflow solutions, remote assistance, and spatial computing capabilities to ensure a handsfree experience thus reducing human errors and increasing efficiency

Value Proposition

ARmor's proprietary modular architecture allows customers to build their own device as per their specific requirements. Each enterprise has its own specific set of requirements with the requirement of various different sensor and hardware configurations. ARmor lets the customer choose their configuration thereby saving cost and meeting all application requirements.

Business Model

B2B model – ARmor being a fully modular solution consists of plug and play modules which can be configured as per enterprise requirements. ARmor would be sold directly to these enterprises post POC testing and pilot runs.

Current Traction

ARmor demonstrated at AirShow 2021.
Trials done with GGS Inc, PTC, Rotary Electronics, Anand Electronics, Mahabell Industries

How did MSH support you?

SASACT grant received has helped us in the ARmor productization efforts and also in conducting pilots with our target customers.

Team (Key Members)

Milind M – CEO
Riya PB – CTO
Pradeep P – COO
Gopal K – Software Engineer
Nikhil BJ – Hardware Engineer
Daniel P – Product Design Engineer

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MEITY STARTUP HUB

AI Highway

Health Tech **Bangalore**

Startup Brief

Ai Health Highway is an Ai-first company focused on making screening of chronic disease cost effective at primary care clinics, which is the first point of contact for any patient. Our goal is to reduce 25% of premature deaths due to NCDs by 2025 and work towards early detection and prediction of Heart/Lung Disorders.

Problem Statement

Cardiac Diseases are the world's number one killer (17 Mn deaths every year globally & 0.6 Mn deaths in neonates in India every year) 31% of all global deaths and 80% of non-communicable diseases deaths occur in low- and middle-income countries. There is lot of subjectivity in the interpretation of heart sounds (acoustics & human audible range) Hence, there is a huge MISSED OPPORTUNITY to detect Heart/Lung Disorders at the primary care clinics.

1. Out of approx 4Bn OPD visits every year in India, > 50% of the them are with primary care physicians/GPs/AYUSH Doctors, Nurses and ASHA workers in clinics/OPD/home setting (Out of Hospital setup - where there is no access to ECG, ECHO Xray, CT/MRI).
2. There are 4500+ Cardiologists for 1.3 Bn population (the need is 88,000)
3. It takes 2-7 years for doctors/nurses to become proficient in identifying normal/abnormal heart sounds
4. There is lot of subjectivity in the interpretation of heart sounds (acoustics & human audible range)

Market Opportunity

Market Opportunity – Device + Data & Intelligence

$1Bn	$100Bn
• Traditional Device only market size (Stethoscope) $600Mn-1Bn	• ECHO & ECG $15Bn
• Target end user – Physicians $10Mn	Healthcare Big Data & Analytics $68Bn
• Elderly & Home Health – $150 to 200Mn	• Shift from hospital based screening to OPD / Home / Virtual
• COVID – Tele Health 3Mn consults in 1 yr & 35K / day	

Solution Concept

AiSteth is a smart stethoscope to screen, detect & predict Heart/Lung disorders using Ai/ML. It has got 3 key components:

• Device – picks heart/lung sounds and converts them into visual wave patterns
• Data – the heart/lung sounds are streamed via bluetooth to a companion smart phone app for visualization + record, store and share capabilities
• Intelligence – ML algorithms run on top of the above two layers of device + data

AiSteth has Covid use-cases as below:

• For use by elderly at home
• Remote monitoring of Heart/Lung sounds for “at high-risk groups” with co morbidity (chronic heart and respiratory conditions)
• Use along tele-health, tele-medicine platforms for remote tracking of vitals

Value Proposition

• See the Sound (Acoustic + Visual Learners)
• 2-in-1 Can be used as traditional & digital stethoscope
• Store & Share – Tele Health / Second Opinion

Device
• One-time sales revenue.
• Young Medical Graduates & allied healthcare staff.
• 200,000 graduates per year in India.
• $100 per device.

Data - Per patient screened
• Physicians < 10 years' experience - Medical Colleges,
• Clinics with no ECG, ECHO
• 4Bn+ OPD Visits every year
• $1-10 per patient screened

Intelligence/Predictive Analytics
• Analytics/B2B - Pharma - Providers - Payors
• B2B Corporate Clients - Average deal

Current Traction

1. 10000+ Families screened for Covid + NCDs using Covid Screening + Triage Tool
2. 12500+ Tele-consultations
3. 1500+ Counselling sessions
4. Pilot Projects for AiSteth – 01 Medical College + 03 Private Hospitals + 50 units soft launch for testing and validation
5. Revenue

a. FY 2020-21 – INR 12.5L
b. FY 2021-22 – Average monthly recurring revenue INR 4L

How did MSH support you?

1. Device – Validation + Field Trials for 1st 50 units (work in progress)
2. Data – Integration of Visualization + ML beta features on companion app. Hiring 01 Android +
3. Intelligence – ML 02 publications accepted for IEEE 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Hiring 02 ML Interns
4. Regulatory – Setting up QMS, IEC 04 compliance tests passed, ISO13485 – 50-60% work in progress

Team (Key Members)

1. Dr. Satish Jeevannavar, MBBS, Exec MBA IIM-Bangalore - Founder / CEO (Sales, Strategy & Fund Raise)
2. Dr. Radhakrishna Jamadagni, MBBS, (MPH) Idaho State University - Founder / COO – Product Development & Clinical Research
3. Anuj Pandit, IT Head
4. Prof. Prasanta Kumar Ghosh: leading ML and Signal Processing is a faculty at IISC (Indian Institute of science)
5. Dr. Nagendra Pratap Singh, Ph.D. Mech Engineering – IISc, Bangalore – Head of Technology / Hardware
6. Dr. Vishnu Sunil, MBBS, DNB (Family Medicine), MRCGP(INT) – Head of Medical Team
7. Ashwin Chandrasekaran, MIB, France – GM Operations & BD

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MEITY STARTUP HUB

EDSIX BRAINLAB PVT. LTD

Edsix Brianlabs

Health Tech **Bangalore**

Startup Brief

SKILLANGELS® - Our STEM.ORG (USA), Authenticated, Award-Winning Cognitive Learning Program (CLP) enhances learning abilities and Higher Order Thinking Skills (HOTS) through game-based, continual training and assessment for 6-13-year-olds (Grade 1-8)

Problem Statement

As per Mckinsey, Global Research Institute, Problem-solving, Critical thinking, Innovation, and Creativity are cited as the most lacking skills among employees today. In the upcoming days, automation and Artificial Intelligence (AI) will hasten the shift in skills that the workforce requires. Demand for technological, social, emotional, and HIGHER COGNITIVE SKILLS will grow by 2030. Deloitte's research shows that increased cognitive abilities and social skills can be associated with the uplift in wages. A 10% increase in cognitive abilities equates to a 12% increase in median hourly earnings.
85% of jobs that will exist in 2030 have not been invented yet and 65% of children starting schools would one day hold jobs that do not exist now!

Market Opportunity

Globally Cognitive assessment and training market is projected to grow at 29.3% to reach $11.4 B by 2025
The social and emotional learning market size is projected to grow from USD 1.2 billion in 2019 to USD 3.7 billion by 2024, at a Compound Annual Growth Rate (CAGR) of 24.7%

Solution Concept

Our Program focusses on helping the students to build cognition and meta cognition which helps them Learn to Think, Think to Learn® & Learn to Learn. By this, they build a strong focus to their effective learning outcomes right from their young age. We can transform young minds to powerful minds (higher IQ). Their abilities to ace the curriculum tests or any high stake or entrance examinations becomes a second nature to them.

Value Proposition

The benefits are multifold to students (1) Increased attention and learning (2) better information processing (3) sharpened logical thinking and reasoning (4) easy visualization to help students think and (5) overall improvement of learning abilities

Business Model

B2B, B2C, B2G.

Current Traction

Nationwide implementation order for Kendriya Vidhayalayas, TN State Government Schools & B2C.

How did MSH support you?

Provided timely support during Covid Times with the SASACT fund.

Team Key Members

Sarav, Kumaran, Damodaran & Mohana Krishnan

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MEITY STARTUP HUB

SM Learning Skills Academy Pvt. Ltd.

COGNIABLE
Enabling Special Needs lives, the data way

Healthcare **Gurugram, Haryana**

Brief of the Profile (Word Limit: max 300 words)

Cogniable is a Machine learning driven assistive technology for early detection and affordable treatment of autism spectrum disorder.Founded by researchers and Scientists from IIT-Delhi, paediatricians, Psychologists and BCBA's from India and USA, Cogniable brings affordability, accessibility and high-quality management on Autism condition on your fingertips.

Problem Statement (Word limit: max 150 words)

Delayed detection of children for neuro-development delays such as Autism Spectrum, Disorder. (ASD), Expensive and inaccessible therapy for children with autism, Limited capacity of clinicians, Poor quality of detection and therapy outcomes

Market Opportunity (Word limit: max 200 words)

- Universal Screening- All children can have access to early diagnosis and treatments, within the early intervention window. (25 million annually in India)
- Increase Paediatricians and clinician efficiency
- Treatment personalization and recommendation using longitudinal assessment and intervention data.

Solution Concept (Word limit: max 200 words)

- Artificial Intelligence technology – "Cogniable" available on mobile application performs functional assessment from the play-based videos of the children. This is used for early screening and intervention/therapy of autism spectrum disorder
- The tool allows clinicians to build virtual clinics to perform digital and remote assessment and build personalised behaviour plans, treatment protocols with machine learning personalization and recommendation.
- Available to clinics and parents, Cogniable allows online sessions, home sessions to make intervention feasible and accessible for children with autism

Value Proposition (Word limit: max 200 words)

- Early detection of children for neuro-development delays such as autism spectrum disorder
- Feasible, economical, and accessible for parents and child
- Personalized, predictive and parent driven.

Business Model (Word limit: max 100 words)

- We offer our solution training, one month trial, and move them to a subscription-based model.
- Engage with clinics launching joint awareness sessions with various hospitals and pediatricians in Tier 1 and Tier 2 towns.
- Currently, we are working with thrity clinics where the subscription model at 350-500 INR in India per month per user and $10 in the US.
- We plan to reach clinics, schools, pediatricians working from multiple locations, offer franchise models, and serve more than 500 customers. These large clinics further consolidate the sector by bringing small clinics and players in their franchise with our technology as an enabler and consolidator.

Current Traction (Word limit: max 50 words)

Currently the software is used by more than 2000+ users in India, US and Singapore.

How did MSH support you?

Marketing support, product development, new city launches and new client acquisition.

Team Key Members

- Manu Kohli- Director
- Swati Kohli – Director
- Sanyogita Kohli – Director

Noccarc Robotics

MedTech **Pune, Maharashtra**

Startup Brief

Noccarc, an engineering startup having products for the MedTech industry has earlier developed NOCCARC V310- an ICU Ventilator. NOCCARC V310 was launched in July 2020 to help the nation fight COVID-19.
In just a span of one year, Noccarc has deployed 3000+ units of NOCCARC V310 ventilator in government & private hospitals across the nation.

Problem Statement

The healthcare facility in India is highly centralized. Predominantly, critical care facility is available in hospitals located in Tier-1 cities. The population living in other parts of the country hence depends on the healthcare infrastructures located in Tier-1 cities. In case of emergency, the patients have to be relocated to the Tier-1 cities by ambulance. The ambulances deployed in India do not have critical care facilities, which is required to save lives during the transit from remote locations to the hospitals. This imposes threat to many lives since majority of the population in India lives in Tier-2 & Tier-3 cities.

Market Opportunity

There is an immense scope of remote health monitoring & control, especially in a country like India where majority of population resides in remote locations, where access to critical care is a challenge. To address this gap, Noccarc has taken up the challenge to develop a Transport ventilator that provides respiratory assistance to patients who are shifted to hospitals in cities.

Solution Concept (Word limit: max 200 words)

Noccarc Transport Ventilator is a solution to bridge this gap in the healthcare industry. The transport ventilator can also be used as an ICU Ventilator once the patient reaches the hospital. With all patient inclusion: adult, paediatric & neonatal, Noccarc transport ventilator will have all vital modes of ventilation to treat wide range of respiratory issues.

Value Proposition (Word limit: max 200 words)

Noccarc Transport Ventilator will mitigate the risk imposed to life of patients who are being transferred to hospitals by ambulance. With high value-to-price offering, Noccarc Transport Ventilator will have wide range of features to provide respiratory support to patients. The patients are usually accompanied by paramedicals who have limited knowledge of critical care. To address this, Noccarc transport ventilator will also have remote monitoring & controlling feature, so that the doctors available at the hospital can take precautionary measures to keep the patient stable until the patient reaches the hospital.

Business Model (Word limit: max 100 words)

The transport ventilator being developed by Noccarc will be sold through the following channels:

- Direct Sales: To ambulance manufacturers
- Sales through 50+ onboarded channel partners: To hospitals & ambulance service providers

Current Traction (Word limit: max 50 words)

		Milestones Status
1.	Development of HMI display module	Completed
2.	Development of electronic circuit boards with EMI/EMC compatibility as per IEC 60601-1-2	WIP
3.	Development of dies and molds for plastic injection molded parts	WIP

How did MSH support you?

Through the SASACT Scheme, MSH has funded the Transport Ventilator project of Noccarc. The funds are being utilized for the R&D expenses to develop proprietary modules that will be incorporated in the transport ventilator.

Team Key Members

Harshit Rathore: Cofounder & CTO
Nikhil Kurele: Cofounder & CEO
Tushar Agarwal: Head: New Products & Innovation

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MEITY STARTUP HUB

Cutting Edge Medical Devices Pvt. Ltd.

Medical Devices **Indore, MP**

Cutting Edge Medical Devices Pvt. Ltd. Born To Innovate...

Startup Brief

We are a Med-Tech start-up Company, democratising healthcare by offering a Comprehensive Digital healthcare solution with indigenously developed, smart, accurate yet affordable medical devices that reach out to the bottom of the pyramid and provide the needed diagnostic and therapeutic services these devices simultaneously generate high-quality healthcare data and send it to our cloud facility for storage and processing. We are also utilising the data on the cloud to provide A.I. Enabled Predictive Healthcare services to the healthcare professional and end users in the Bottom of the pyramid.

Problem Statement

Early diagnosis of the disease is the most efficient way to manage any disease. Chronic Kidney Diseases (CKD) are one of the deadly conditions hugely affecting India. In India we have around 20 Crore patients suffering from CKD. Diabetics and Hypertensive patients are at a high risk of developing Kidney damage, but due to the existing methods available for early diagnosis have problems of restricted access, high cost or reliability, millions of patients land up with chronic kidney diseases (CKD).

Market Opportunity

The Digital Healthcare market in India is going to reach USD 485 Billion by 2024 as estimated by market experts. And we are fortunate that the potential can be achieved after the legalisation of the TELEMEDICINE in India the prospects and need of smart devices is going to increase like anything. With SASACT Support we are developing the home-healthcare version of the device for a larger customer base.

Solution Concept

A portable device that can accurately estimate even minute quantities of proteins in urine is required for early detection of kidney diseases in the vulnerable populations. The Diabetic and hypertensive patients are the ones who are vulnerable to the silent kidney damage. At present the early detection test is very costly and requires sophisticated machines, making its access restricted. on the other hand, the low cost options, the Dip-sticks are extremely unreliable, all these lead to the missing of the early kidney damage leading to the a large number of CKD patients in India and the world. We have developed a high accurate and reliable, low-cost portable device to do the above test for early detection of kidney diseases in the population. We have developed the Bench-top version of the device and are now developing a pocket- size personal / home healthcare version of the device for a wider approach.

Value Proposition

We are offering a Home-healthcare version of the affordable test for a more widespread use with a lab-like accuracy in the comforts of the home.

Business Model (Word limit: max 100 words)

The personal/home healthcare version is under development from SASACT Support. WE are offering the devices on a DaaS – Device as a Service Model, where we install the device in the Labs, clinics and hospitals and just charge them for the test they perform on a Pay Per Test basis.

Current Traction (Word limit: max 50 words)

We have around 70 devices installed in and around Indore city of MP. We can replicate this model rapidly to other places.

How did MSH support you?

We wanted to develop a Personal / Home Healthcare version of the device and were looking for funds. We are fortunate that we got support from MEITy under their SASACT Scheme. We are developing a Home Healthcare version - SCINITGLO PRIVY of the device with Smartphone application.

Team Key Members

Founder – Dr. Pankaj Parashar – MBBS PhD Biomedical Engineering IIT Delhi (Pursuing)
Co- Founder – Rishi Sharma - Director
Co-founder - Dr. Ankita Parashar - Director
Mrs. Pooja Sharma - Director

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Government of India

MEITY STARTUP HUB

IndusTill FarmTech Pvt.Ltd.

AgriTech **Pune, Maharashtra**

Startup Brief

We are IndusTill FarmTech Pvt.ltd. through our Farm automation brand AUTOFARM we are trying to build effective and affordable farm automation systems for small and marginal farmers to effectively digitize their farms. The vision is to minimize the drudgery in the farming by using advanced technologies to automate the farming activities and increasing productivity and yield by scientific application of inputs and precise control of important farming processes/practices.

Problem Statement

Accurate dosage of water and fertilizer can significantly improve the crop productivity, at the same time, reduced usage of water and fertilizer savings, reduces relative costs. Maintaining scientific scheduling of irrigation and fertigation cycles is a challenge for farmers due to lack of knowledge, time and resources. Further, labour scarcity increases hardship of farmers. Our product AutoFarm Swayam empowers farmers to implement scientific dosage of water and fertilizer and reduces at least one labour of irrigation and eases farmers' pain of visiting to farm at odd hours. Crop diseases significantly affect the yield and quality of crop. Forecasting of symptoms of crop disease beforehand is challenge to farmers. Delay in prediction of disease and subsequent delay in action may hamper productivity and quality of yield significantly. AutoFarm Satark provides actionable insights to farmers for prevention of fungal diseases prevention. It changes the traditional observe-and-act approach of farmers to forecast-and-act and empowers farmers to take data driven actions.

Market Opportunity

Indian precision farming market was valued at over $85 million in 2018 and is anticipated to grow at CAGR over 10% till 2024. It is expected to reach around $150 million in 2024. BIS research estimates global precision farming market would reach $10.55 billion by 2025. India precision agriculture market can be segmented based on technology, component, application and region. Component segment with software and hardware like sensors and cameras is expected to dominate the market.

Solution Concept







Value Proposition

Democratizing the Farm Automation technology through effective and affordable farm automation solution is our prime focus in Autofarm. If effective farm automation system is deployed at a very large scale there will be huge saving in water and fertilizers and it also has potential to reduce the wastage of fresh produce. This can lead to increase in profit margins for farmers and also increase in productivity of each small land parcel.

Business Model

The primary customer are small farmers with land holding 2 to 5 acres as the product is specifically designed by keeping in mind needs and purchase power of small farmers. Nearly 80% of farmers of India are small farmers. Cash crop (sugarcane and cotton), orchard (grape and pomegranate) and vegetable growers will be targeted initially. Medium farmers, farmer producer organization, corporate farmers will also be addressed.

Current Traction

Bookings worth Approx.10 Lakhs have been received for total farm automation product. We have installed 20+ units of newly developed AUTOFARM CanSense under SASACT on a paid pilot basis. We have order pipeline of 200+units for CanSense even before launch.

How did MSH support you?

As the need of highly affordable farm automation system was felt during the first wave even by small farmers, a highly affordable (10X cost reduction) version called AUTOFARM Sense is developed under SASACT funding provided by MSH. This product which is developed & currently being installed across Maharashtra on a paid pilot basis will help immensely to digitize India's fragmented farmlands once launched. This digitization will help in rationalizing the input application and increasing market access to outputs.MSH and SIIC has helped us with timely funding and valued guidance during this development and we hope to impact millions of small and marginal farmers with this device in coming years with their support.

Team Key Members

Shrilesh Mande, Co-founder and CEO
Shubham Pardeshi, Co-founder and CTO
Ajinkya Borhade, Co-founder and Head of Agronomy

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Government of India

MEITY STARTUP HUB

Primary Healthtech Pvt.Ltd.

PRIMARY HEALTHTECH

MedTech (Healthcare) **Guwahati, Assam**

Brief of the Profile (Word Limit: max 300 words)

IOT-enabled Real-time Multi-Diagnostics Device for early detection of chronic diseases at a 10x affordable price to provide personalized instant guidance to patients using AI/ML for better disease management using various connected services like doctor consultation, medicine delivery and subscription packages to provide accessible healthcare diagnostics and monitoring.

Problem Statement (Word limit: max 150 words)

More than 6 Cr Indian families go below the poverty because of the tertiary and secondary care expenses. Among the many ways in which this problem can be solved, the most effective & feasible solution is making the diagnostics tests easily available and affordable. In doing this, setting up pathology labs with semi auto-analysers has been the conventional solution but it is full of problem. Through Magic BOX, we intent to bring the cost of setup of a small-scale test centre to 1/20th of the existing cost which is made possible by bring the required of capex and opex down by a factor of 1/10th and 1/5th respectively.

The COVID-19 pandemic has taught us that entire current healthcare infrastructure is not equipped to handle the burden on such a scale and it has also accelerated the acceptance of digital and point of-care solutions among the public and medical fraternity.

Market Opportunity (Word limit: max 200 words)

Through Magic BOX, we intent to bring the cost of setup of a small-scale test centre to 1/20th of the existing cost which is made possible by bring the required of capex and opex down by a factor of 1/10th and 1/5th respectively. This saved cost and time will ensure the low expenditure requirement from the government and organizations engaged in public health to offer the higher accessibility, even to the remotest part of the country. With the uncompromised health data available, it shall be made accessible for better planning and for bringing new insurance products in collaboration. Higher number of tests with each test costing less will add a significant value. Based on our estimation, it can be more than 250 Crores in next 5 years only.

To set up a diagnostic lab, capex and opex is very high as equipment and manpower cost makes overall model commercially non-viable, which makes diagnostic test inaccessible to majority of people. And even if they get their diagnostic report, continuous follow up and lack of medical history makes it difficult for doctors to provide accurate diagnosis.

Solution Concept (Word limit: max 200 words)

Our innovation the Multi-Diagnostic Device 'Magic-Box', is capable of analysing more than 30 parameters for diagnosis of Kidney, Liver, Pancreas, Heart, etc in less than 15 minutes with more than 6 parameters which can be tested simultaneously. The initial validations from 5000 real sample have reflected a better accuracy than the prevailing semi auto analysers. Using Nanotechnology, advanced optics and optimized algorithms, our patented technology is capable of performing diagnostic tests at low volume with better accuracy, thus each test is around 1/10 of the existing cost. This IoT enabled platform, generates real time data, electronic health records and patient data profile. This data profile of a specific patient after analysis and predictive algorithms provides health insights which are vital for disease management. Accessibility of healthcare at doorstep will be very crucial for Non communicable disease detection which will be much-needed paradigm shift from the costly, bulky, difficult to handle semi-auto-analysers, to a device that can be used with the same ease in any parts of India and offers more features, saves time and money for patients as well as for the government and private organization in providing cost-effective yet accessible quality healthcare.

Value Proposition (Word limit: max 200 words)

- Affordability - Device will be priced in sub-15k range and it will bring down the cost of tests by 1/10th as we are using proprietary biosensors and device which are manufactured using economic raw material.
- Portability - Smartphone-sized device, needs no heavy set-up and can be used in home conditions while to set up diagnostic lab a lot of space and infrastructure is required.
- Easy to Operate - Anyone who understands how to use a phone can use it without difficulty and testing simply takes three simple steps. A trained Manpower is necessary in a traditional device, who will require significant training.

- Vernacular Language - Our smartphone application is multilingual, with a goal to help technicians comprehend and use our device with ease.

- Battery operated — Magic-Box is robust for low resource setups, it has a power backup of 8 hours, necessary for frequent outages which causes inaccuracy and delays in tests.
- Multiple tests at same time
- Reduced steps of detection
- Instant results
- Multi-organ Testing – Our device is capable of doing all tests required for Liver, Kidney, Pancreas and Cardio-vascular disease.
- AI enabled Patients App –Health insights and personalized recommendations for better health monitoring.

Business Model (Word limit: max 100 words)

1) During the first 12-15 months of the rollout, we want to concentrate on B2B and B2G. We are also going to collaborate with government run (PHC), (CHC), Dispensaries and other small clinics to adopt our device.
2) We've already formed initial B2B collaborations and have begun conversations about strengthening Village Level Entrepreneurs.
3) Using our AI/ML algorithms we are going to provide predictive health insights to patients for better health monitoring. Along with this, services like Doctor Consultation, Medicine delivery and other subscription-based wellness products will also be provided.

Current Traction (Word limit: max 50 words)

We are right now at pre-commercialization stage where we are going for commercialization within next 6 months.

How did MSH support you?

MSH has supported us in finalizing our product and helping us in commercialization ready .We have got following support form MSH –

- Incubation support – Has helped us in framing business strategy · Networking support
- Funding support

Team Key Members

Our team comprises of engineers, researchers, designers, operations and business development experts. Sahil (CEO), Rahul (COO), Dr Pooja (CMO), and Ankit (CPO) have complimentary skills required to make a complete team.

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MEITY STARTUP HUB

Bioscan Research Pvt.Ltd.

DeepTech, AI **Bengaluru, Karnataka**

Startup Brief
Bioscan Research leverages optics, electronics, mechanics and software to develop, manufacture and commercialize affordable medical devices for early detection of life-threatening diseases (like brain haemorrhage), non-invasively.

Problem Statement
50 million people become victims of Traumatic brain injury every year in the world. Around 60% of them never return to normal life not because of lack of treatment but because of delay in detection. TBI patients do not prefer to go to a CT centre when they are mildly symptomatic or asymptomatic and this leads to irreparable brain damage by the time clinical symptoms arise and the patient goes to hospital. With Cerebo® we would be able to detect hemorrhages at an early stage and hence increase not only the chances of survival of patients but also positive outcomes post-surgery. It is non-invasive, portable and easy to use. And since it does not need any expert data interpretation, hence can be used by a layman with just 10-20 minutes of training.

Market Opportunity
Cerebo would be placed around one CT centre covering a pre-defined perimeter. These Cerebo units would screen patients in primary care centres and then refer them to CT for detailed analysis. This would be a win-win for the patient, CT centre and the neurosurgery department. The patient would be identified at an early stage maximizing his chances for survival and minimizing the chances of disability. The CT centre would have access to a larger population which was otherwise not accessing the centres and lastly the neurosurgery department would have better outcomes for patients who are undergoing the surgery.

Solution Concept
Our solution- Cerebo® could be utilized by researchers in pharmacovigilance where there is probability of developing a brain hemorrhage because of a particular drug administration. It will provide a very convenient and harmless way to monitor the patient and at the same time maintain a record of the same.

Value Proposition (Word limit: max 200 words)
CT Scan and GCS score are used to detect intracranial bleed detection. Cerebo is affordable, portable, non-invasive, without harmful radiation and can be used by a common man with minimal training.
Also it has following features:
Fast detection: Takes <2 min to scan
Periodic screening without any side effects

Business Model (Word limit: max 100 words)
There are three main sources of revenue:
Source#1: One-time sale of the device
Source#2: Recurring sale of disposable caps. A pair of caps is needed per test
Source#3 : Subscription for Cloud connectivity(Dashboard and app) for remote monitoring of patient data

Current Traction (Word limit: max 50 words)
Currently company has completed has received pre-orders from its distributors and LOI from renowned hospitals in India.

How did MSH support you?
Meity Startup Hub (MSH) has not only helped us in taking product to the market with SASACT Grant, but also provided us pathway to key opinion leaders in the market in the tough time of Covid - 19. With the help of fund, company was able to get into the market and helped in fulfilling its aim to save lives.

Team Key Members
Anupam Lavania – CEO, Co-Founder; Shilpa Malik – CTO, Co-Founder

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Government of India

MEITY STARTUP HUB

Pixuate (Cocoslabs Innovative Solutions)

HealthTech **Ahmedabad, Gujarat**

Startup Brief

Pixuate is the brand name of Cocoslabs Innovative Solutions Pvt. Ltd. which is a deep tech startup that builds artificial intelligence-based video analytics solutions. Pixuate's recognition software makes sense of videos and images to deliver real-time, accurate and actionable intelligence to businesses. Its key products are facial recognition, automatic number plate recognition and thermal analytics. Pixuate's recognition software offers a suite of AI based analytics for the surveillance cameras and thermal cameras at one of the highest accuracies. Pixuate specializes is building scalable solution which can give centralized results by connecting to 100s of cameras for variety of analytics.

Problem Statement

Post COVID pandemic, screening at public places for people with elevated body temperature is going to become critical to control spreading of infection and mandatory in the long term. Checking for fever is one of the most preliminary and commonly used tests to screen symptoms of virus infection, but handheld thermometers is inefficient in the long run, so there is a need for an effective automated method. We are solving the problem of mass-scale screening for people with elevated body temperature at public places effectively and without disturbing daily movement of the crowd. Our solution can detect multiple people with high body temperature in real-time in crowded places like arrival and departure of airports, railway stations, bus stands, business parks, offices or any other entry exit points where mass movement is there. Most of the available thermal screening solutions can detect one person at a time or very few competitors can do detection in a limited crowd.

Market Opportunity

Target Market: Any public place with mass people movement is an ideal candidate as a customer for the product. Some of public places that can monitor body temperature from a distance and in the crowd.

Solution Concept

Pixuate video analytics solution for thermal cameras is a seamless, contactless and high-speed detection solution for mass movement areas without disturbing public movement. Our software technology combined with thermal cameras will identify multiple persons having high temperature in the same frame in real-time, and also provide an alert system to notify about identified person to any number of authorities on their phones and laptops. It will provide additional analytics like mask detection, gender and age range even when wearing mask. Since our software is compatible with basic thermal cameras, we brings down the overall solution cost by 50-70% thus making it more accessible and scalable.
Key advantages of this solution:

1. Temperature detection accuracy +/- 0.1° Celsius
2. Upto 10 persons can be detected at a time
3. Can be integrated with any thermal camera with onvif support
4. 1-3 second detection time

Value Proposition (Word limit: max 200 words)

The core product is an AI based recognition platform for video analytics built on deep learning technology. It is a software product based on the image recognition and machine learning. The video analytics platform gives real-time alerts and analytics using the feeds of the CCTV surveillance cameras, thus making regular surveillance cameras intelligent.
Following are the various analytics available in the recognition platform:
1) Thermal Analytics: Detect temperature of multiple people in a single frame, capture screenshot of the person, mask detection and social distance check.
2)Person Detector: Face Recognition, People Counting, Person Tracking, Gesture Recognition, Intrusion Detection, Attributes like gender, male/female, clothing colour, cap, gloves, bag
3)Vehicle Detector: License Plate Recognition, vehicle classification, over speeding, red light violation alert, parking violation, triple riding alert
4)Object Detector: Logo and product identification, unattended baggage, fire/smoke detection.

Business Model

The sales channels for this product will be through known and established channels for IT sales that operate in Enterprise B2B and Government tenders. Marketing for potential customers will be carried out through dedicated channel partner who are in the space of reselling enterprise grade CCTV cameras who are connected to enterprises, participate in government tenders, manufacturing units, business parks, tourism industry etc.

Current Traction

The product was launched successfully in October 2020 and was deployed by Govt. of Karnataka's body Directorate of Urban Land Transport (DULT) to screen pedestrians at Churchstreet, Bengaluru. During the Clean Air Street Initiative, we could screen over 10,000 people per day for temperature and mask wearing compliance.

How did MSH support you?

MSH has supported is with timely funding and helped us with visibility as part of SASSACT program to reach larger audience to know about our product.

Team Key Members

Prathvi Palekar, CEO & Founder: 13 years experience in technology development, expertise in machine learning, deep learning and AI solution architecture.
Akshata Kari, COO & Co-founder: 12 years experience in startups and large companies in project management, operations and business development. Her previous work includes IIM Ahmedabad's incubation center CIIE, Barrix - an agritech startup and Technoserve - a non-profit consulting organization.
Nagaraj Bhat, Channel Sales Lead – 15 years experience in enterprise IT products sales, worked with multinational IT distribution firms and OEMs like iValue and American Megatrends.

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MEITY STARTUP HUB

Bespoke Health Services Private Limited

Intelligent Mobile Disinfection Robot (IMDR) **Hyderabad/Telangana**

bhs. Bespoke Health Services Pvt. Ltd. Incubated at IIT Kanpur

Startup Brief
At BHS we are continuously working towards bringing lives back to normal. Our team of experienced Health care professionals and biomedical engineers offer comprehensive range of Med-tech Products & services.
Our Products employ the latest technology and also helps others to avail the benefits of latest technology

Problem Statement
The need for disinfection and sanitation has gained thrust and importance due to the pandemic that has gripped the society. The deadly corona virus has taken lives and there seems to be no let-up due to absence of a vaccine and also the time it takes for the society to develop the herd immunity.

Market Opportunity
Once the prototyping is successful, we will raise the venture funds to large scale commercial production. The time frame from developing the prototype to commercialisation would be 10-12 months.

Solution Concept
Fraction of the cost with comparable products in the western markets
Readily acceptable product – Robust and easy to maintain

Value Proposition
Make in INDIA product |
Specific to the needs of the INDIAN consumer market
Fraction of the cost with world class technology
Readily acceptable product – Robust and easy to maintain

Business Model
Since the demand for the product has come form the industry and the market the revenue model is based on the sales and also service.
After the rigorous testing in large settings, medium settings and small settings; SaniBOT will be ready for the commercialization. As per our estimates, if such robots are produced in India, the cost of production will be reduced by at least 50%. We envisage, in next 10-12 months, the first batch of production can hit the market.

Current Traction
The prototype has been developed fully and has received the clearance from the CCMB regarding its effectivity and the efficiency. The fully functional model isnow in use at the AIG hospitals.

How did MSH support you?
The MSH supported us with funds and alsk the technical advice from the IIT Kanpur

Team Key Members
Dr. Madhu Vasepalli – Mds
Mr Roopesh Chinni- Tech Team
Mr Vedant Rati- Tech Team
Mr Kranthi Kumar – Project Manager

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Government of India

MEITY STARTUP HUB

Blinkin Technologies Private Limited

AR,AI **Bangalore, Karnataka**

Startup Brief
The BlinkIn platform is best understood as a collaboration platform between supporters, experts and end-users. It is built in a modular way and hence is scalable and customizable in multiple ways. This section gives an overview of how the platform adopts on a per-case basis to the users' needs. By this, BlinkIn can adopt multiple markets while gaining an unseen USP via its ecosystem.

Problem Statement
When it comes to telephonic based remote assistant/support/guidance there are inherent limitations to it. Experts giving help often find themselves explaining a very visual problem over an audio call. They cannot see what the users see and are limited to how they explain and describe a technical problem. While the experts may be well trained, highly technical, empathetic, and have strong communication skills, they still are limited by the actual medium of audio phone support and the cognitive capacity of the user on the other end.

Market Opportunity
The Indian capital goods sector has a market size of USD 43.2 bn. World's Top M&E Manufacturer Germany is home to Europe's best-performing M&E sector, with record turnover in the region of EUR 225 billion in 2016. All these machines require instant remote support onsite, on demand. Similarly, BlinkIn can be deployed in every ambulance which could give the experience Doctors presence and care to anyone instantly, regardless of distance. Moreover, BlinkIn can be used to transport critical life-saving skills in real-time to remote, disaster-struck areas where it is too dangerous for humans to go.

Solution Concept
With the integration of emerging and exponential technologies such as AR and AI, Blinkin is able to seamlessly transport human skills and experience to the exact location when and where they are needed. BlinkIN allows an untrained operator to complete a diverse series of tasks, from simple to complex, in a physical environment.
Our solution helps to see, touch, hear and interact.

Value Proposition
With the integration of emerging and exponential technologies such as AR and AI into a multipurpose BlinkIN system we are able to seamlessly transport human skills and experience to the exact location where and when they are needed.

Business Model
Pricing strategy – Premium pricing for first to market product with ROI (20% to 30%) of value created • Monthly subscription - License per concurrent users, Germany Machinery Market Size: We are selling our service to these industry for German market at a subscription model for avg 3000 Euro per month. There are more than 11000 machinery manufacturing industry in Germany. So, the TAM size for Germany is 33 million Euro per month.

Current Traction
1. L&T Defence: Delivered and paying customer now
2. PSA: Pilot successfully completed, paying customer now
3. BOSCH: Ongoing Paid Pilot
4. Maruti Suzuki: Ongoing Pilot exploration and Incubation under NSRCEL Mobility Program
5. WILO: Paying Customer
6. Huber Ranner: Paying Customer

How did MSH support you?
Market Validation, Hiring, Funding, Business mentorship

Team Key Members
Harshwardhan Kumar (CEO)

Ministry of Electronics and Information Technology
Government of India

MEITY STARTUP HUB

Crion Technologies

Enterprise Applications, Industry 4.0, Digital Twin, VR/AR **Chennai, Tamil Nadu**

Startup Brief

CLONOS is a Digital twin for Plant 3D Visualization for Document management, Project management, Plant Walkaround management, Self-Auditing, Operational assistance, Live Data Management, Process and Machine analytics, Incident recording and Process and machine data predictions, Operator and Visitor Training
CLONOS Digitally clones Plant Activities for remote asset management and Operational Assistance by Integrating various OEM Documents and Plant Documents. Being a 3D Visualization tool, clear understanding of Process parameters is made for Quick and better decision making. Cutting down Operational expenses by 20%. And reducing Down time of plants in turn improves productivity. Our initial focus is to target the Oil storage and Distribution terminals market.

Problem Statement

In process plants (especially Brownfield plants), maintaining and updating documentation is a challenge. These documents are Layout drawings, Checklists, etc. This is addressed by As-Built Engineering service providers who provide surveying, 2D drafting and documentation services to these plants almost twice every year. In these, we've found challenges like plant information not readily available to the plant managers and plant heads to make decisions. Communication among project teams need onsite visits, and in a 40 acre plant every visit for each topic takes 1-2 hrs, even within the plant. Very little amount of work can be done for onsite operations. Even though plants have IOT systems enabled, understanding and making sense of the graphical data from SCADA systems is difficult mainly for plant owners and high-level managers who want to have a larger picture in a quick intuitive manner.

Market Opportunity

Industrial Digitization has seen massive growth post COVID, and Industries have already started understanding the need for Remote Plant Monitoring. Digital Twin is a blooming solution in various sectors and shall have a consistent growth for decades. Being in the midst of Technology Developments and Customer needs, the Digital Twin sector with CARG of 58% shall be the apt venturing market.
The Digital Twin market was not mature enough until the 2020 COVID Digital Revolution, data availability for remote operations is no longer a hurdle for market exploration. CLONOS had already kick-started its GTM Operations. APAC with majority production facilities has seen the highest post Covid digitization process
With Annual Contract Value of customer being INR 5 Lakh - TAM size is calculated at INR Crore per year, with current YOY annual growth rate of 400% CRION has capability of rapid expansion and customer acquisition
Surveys on IOT and Digital Twin implementation by Deloitte and Gartner research companies has revealed the current market valuation of 4.1 billion USD and projected valuation of 48.2 billion USD by 2026

Solution Concept

CLONOS is a Cloud based 3D Virtual Plant tool to Train, Monitor, Plan, Organize, Communicate Effectively among both Projects Teams and O&M (Operations and Maintenance) Teams

Value Proposition

1. Organising and plant customised project management tools are need of the hour for increasing productivity with 3D Visualization of plant and features making their plant operations easier shall be their preferred tool
2. Remote asset management / Organised documentation / Real time Project planning / Less downtime due to predictive maintenance / Plant safety / Remote surveillance
3. Integration of SCADA/SAP/Mails/Planning tools/Document maintenance requirement in a 3D Visualized Core platform
4. Data being very important for productivity of any sector, making live data available with analytics and predictions shall improvise plant operations and plant healthiness as well
5. Reducing Carbon footprint on data collection and surveillance

Business Model

We follow a business model of Enterprise Applications which involves a licence costs, initial customization and setup costs post which there will be an AMC (Annual Maintenance Contract)

Current Traction

We have been executing our MVP with our pilot customer Bharat Petroleum (BPCL). The solution is built with features like document and asset management, live data dashboard, and a web dashboard for operators. This MVP is being deployed at one oil storage and distribution terminal located in Tamil Nadu.

How did MSH support you?

The support provided by Meity Startup Hub through SASACT funding has helped us take our product from its prototype stage to MVP stage. This is helping us in proving our solution with our pilot implementation. We are expecting a commercial order post this pilot implementation.

Team Key Members

- **Karthik Pondugula**

An entrepreneur with a background in 3D and Immersive technologies. B.Tech and M.Tech from IIT Madras. Running a software services company in the areas of IOT, 3D, VR, AR, and Web3D.

- **Vishnuvardhan Jayachandran**

10 Years of experience in Oil and Gas Detail Engineering / Process Visualization / Feasibility and Solution Integration, 7 years of As-Built Engineering activities and Business Development roles. Executed projects for BPCL, IOCL, HPCL, Reliance, etc.,

- **Rathees Paneerselvam**

An IIT Madras graduate with experience in software development in CAD, 3D, Cloud and IOT applications. Interests include Cloud, Gaming Technologies, and IOT. Currently leading the technical team at Crion Technologies and helping industries adapt to the latest immersive and visualization technologies like VR, AR, Web3D.

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MEITY STARTUP HUB

Fluid Robotics

fluid robotics

Water and Sanitisation **Pune, Maharashtra**

Startup Brief

Fluid Robotics is building a smart wastewater surveillance ecosystem, so cities around the world can sustainably reduce urban water pollution. The technology is a combination of robotics and AI, for monitoring the health of wastewater infrastructure, and the health of communities that are connected to it.

Problem Statement

In India, a lack of data about wastewater infrastructure performance is the leading cause behind 50 billion liters of sanitary-sewer-overflows (SSO) occurring every day. On average, less than 30% of urban sewage reaches a treatment plant. Majority of it is discharged untreated into lakes, rivers, and coastlines, through a network of drains.
The sewage flowing through these drains is also an important source of public health information. If sampled safely and regularly, it can effectively be used for infectious disease surveillance. Today, these problems are addressed using sanitation-workers who are regularly exposed to raw-sewage and toxic gases during wastewater sampling and SSOs.

Market Opportunity

The US wastewater inspection market is a $1.7B market, and globally it is about $7B including EU, South-America, and APAC.

Solution Concept

The technology, Fluidhealth, is a multi-parameter wastewater surveillance ecosystem designed for utilities/ contractors to tackle urban water pollution. By deploying Fluidhealth sensors and devices as a service across a city's drain network, utilities are able to

1. Prevent sanitary sewer overflows (SSO),
2. Sustainably intercept, divert, and treat raw sewage previously being discharged into the environment,
3. Track the city-wide spread of infectious diseases such as Covid-19, and
4. Derive insights into wastewater infrastructure performance through an AI-based Decision Support System (DSS).

Value Proposition

Our solution helps cities eliminate the discharge of untreated wastewater into the environment while significantly saving pipeline infrastructure inspection costs. Our drain network optimisation approach allows Indian cities to save upto INR 3Cr for every 1MLD (million litres a day) that is intercepted and diverted for treatment. Our international customers using FluidHealth DSS save upwards of 50% in pipeline inspection costs.

Business Model

Our customers in India include Municipal Corporations and Pipeline Contractors/ Consultants. They purchase our FluidHealth services for Pipeline Infrastructure Inspections, River and Lake Rejuvenation Projects, and monitoring the spread of Covid-19 through Wastewater-Based Epidemiology.
Our international customers subscribe to our FluidHealth DSS service for automating wastewater pipeline inspections.

Current Traction

Since 2017, 12 cities in India have deployed Fluidhealth to monitor 1 billion Liters a Day (BLD) of sewage, because of which 700MLD is now being diverted away from rivers, lakes, and coastlines for treatment. With support from MeitY, 8M people across 2 districts in India are being monitored weekly for the spread of Covid-19. The Fluidhealth DSS was launched internationally in Q2/2021 with initial customers in the US, Chile (Aguas Andinas-Chile's largest water utility), and Singapore.

How did MSH support you?

The MSH grant allowed us to prototype and commercialise the FluidHealth Wastewater-Based Epidemiology (WBE) service.

Team Key Members

Asim Bhalerao (Founder) has an MS in Computer Science, Intelligent Robotics from the University of Southern California and an MS in Mechanical Engineering, Design from Santa Clara University.

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Government of India

MEITY STARTUP HUB

INDrone Aero Systems

Drones, Information Technology,AI,ML **Hubli, Karnataka**

Startup Brief
INDrone Aero Systems is a company based in Hubli, Karnataka which caters to providing actionable intelligence to its end customers with the help of sensors mounted on the drones. We are able to provide these applications to the customers in the Infrastructure, Energy and Mining segments. It enables them to make smart decisions based on real time accurate data in the planning, monitoring and inspection stages of the projects.

Problem Statement
Inaccurate data, time consuming manual process, Unorganised segment with no accurate understanding of technology, No utilisation of historic insights, Up-skilling required to convert raw data to digestible format is longer, risk to human life , data from multiple locations available

Market Opportunity
Indian drone Industry will be worth 15K crore by 2026 (GOI) The combined market opportunity for Infrastructure, energy and Mining presently stands at $ 100 billion as a global opportunity growing at a rate of 30% CAGR

Solution Concept
Indian drone Industry will be worth 15K crore by 2026 (GOI) The combined market opportunity for Infrastructure, energy and Mining presently stands at $ 100 billion as a global opportunity growing at a rate of 30% CAGR.

Value Proposition
Value our customers receive is data on demand, access to information from multiple locations, digestible information with utilization of multiple sofwares, benefit of technology without ownership of hardware, historic insights from the data, information in a short time, faster decision making

Business Model
We operate in a Drone as A Service (DAAS) model where the data is provided via a SAAS model. The platform can be utilised by anyone wanting to utilize the technology and for larger projects we are the ones who collaborate with enterprises as per their needs.

Current Traction
400+ orders completed, 50 + customers and R&D ongoing for future applications.

How did MSH support you?
It supported us in understanding our business model better and allowing us to participate in the relevant programs to help fund the concept. With the right mentors and judges reviewing our pitch MSg also provided the help to validate our startup idea.

Team Key Members
Anurag Joshi, Abhishek Somanagoudar - MSc (UAV Design, Development,Testing and Data processing
Shivakumar Kolinvadi - MSc (Manufacturing)
Kishore Jonnalagadda- MSc (Embedded Systems design and development) Anil Joshi - MSc (Ex Airforce and DRDO)- UAV certification and operations

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MEITY STARTUP HUB

BlueSemi R&D

HealthTech, AIOT **Hyderabad, Telangana**

Startup Brief

BlueSemi is a deep tech AIoT firm founded in May 2017 headquartered in India. Our product design and development are aligned to the world's most compelling and key verticals like Preventive and Connected HealthTech. BlueSemi was founded with the vision to leverage innovative, cutting-edge technology that promotes responsible disruption in Consumer Health-tech AIoT through our proven expertise in product development.

Problem Statement

COVID-19 had infected over 82 million people around the world and 3.34 Cr people infected in India alone making it the 2nd worst hit country. It is highly important to have reliable measures on board to ensure prevention of the spread while safety protocols are followed. Measuring Temperature has been one of the most vital methods of detection for Covid in early stages at public spaces, but with highly inaccurate thermal guns and measures in place the data is not reliable.

Market Opportunity

With businesses, offices, schools, manufacturing units, restaurants, malls, resorts, etc opening up, one of the biggest challenges is managing the safety of the people and assuring them that reliable measures are in place to keep them safe. The market in different verticals is looking for solutions to bring back and adapt to the new normal, while not compromising to their people's safety.

Solution Concept

We at Bluesemi help our clients achieve this by providing them with a thermal monitoring system through our product "SENS", which detects temperature abnormalities and spikes. SENS is a 100% contactless and wireless device with Dashboard with advanced analytics for every scan, Remote monitoring through our cloud-based app, Integration with any Access Management System, Accuracy of +/- 0.2 C, less than 5 Seconds per scan

Value Proposition

With the current temperature monitoring devices unreliable accuracy & no way of getting the data captured. SENS which is India's first AIoT based 100% Made in India solution for your temperature monitoring being 100% contactless, along with data storage & analytics, with under 5 seconds per scan, and many more features. Temperature detection & monitoring is now hassle free, keeping the premises, people, security and employees safe.

Business Model

B2B - Sales through Channel Partners and alliance partners. PaaS- One timeProduct Cost + Monthly Subscription per device

Current Traction

30+ Business Clients across 5 countries in last 6 months - SENS sales. 70000+ scans on a daily basis, 2,00,00,000+ cumulative scans, 350+ locations, 12+ distribution and partnership network

How did MSH support you?

MSH has helped us scale the product and has helped in meeting the quality standards for the products. This has enabled our sales within India and abroad seamlessly. The fund could have been split in a 60 - 40 model to support the scale up we are looking for.

Team Key Members

Sunil Kumar Maddikatla - Founder & CEO; Roshan Gupta - Chief Revenue Officer

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MEITY STARTUP HUB

Prantae Solutions

PRANTAE

Medical Devices **Bhubaneswar, Odisha**

Startup Brief

Pregamo is a health self-monitoring device to indicate kidney damage from urine. The device enables its user to capture even extremely early-stage kidney damage which is a clinical biomarker for pregnancy disorders like Pre-eclampsia, eclampsia and HELLP syndrome.

Problem Statement

Pre-eclampsia is one near-fatal condition during pregnancy that affects all internal organs of the mother leading to Intra-uterine growth restriction (IUGR) of the growing foetus. Kidney health status via accurate measurement of microalbumin in urine of pregnant females (to-be mothers) is considered as a reliable estimate of onset of this pregnancy complication.
However, accurate and reliable assessment of kidney health status at bedside or point-of care is not currently possible. This is important to identify numerous health conditions that are directly dependent of kidney health or functional status of the kidney affects other body organs.
We intend to solve this problem with our offering Pregamo.

Market Opportunity

Pregnancy complications are of global concerns in maternal care. It is gained relevance in Sustainable Development Goal of WHO. The following are the statistics from USA (considered as a highly developed country).



The numbers from developing countries are more alarming. With more than 139,877,400 childbirth per annum globally, the market opportunity is very large. We expect a TAM of 100,000 units annually (global) and 20,000 units (India) at a conservative 1% TAM in the early years of product launch.

Solution Concept



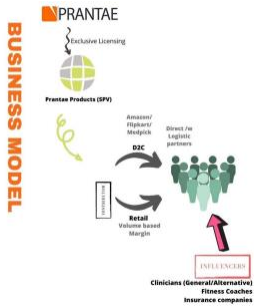
(* The image is for representation only. Will be modified depending on manufacturing constraints and stake-holder feedback)
The portable product is battery operated and built on advanced Bluetooth low energy 5.2 communication with any android smartphone/tablet. The product is IoT enabled and has cloud connectivity for its deployment in Telemedicine setups.

Value Proposition

1. Patent Protected
2. Measures microAlbumin to macroAlbumin range (for complete kidney health status)
3. Highly precise and accurate (near clinical grade performance in a portable self-use unit)
4. Calibrated against clinical grade equipment (doctors can be assured of its clinical accuracy)
5. Instant results (no need for urine storage and transport related inaccuracy)
6. Affordable

Business Model

B2B, D2C



Current Traction

The product is currently being optimized for enable manufacturing according to ISO13485 and MDR 2017, GoI regulations.
Clinical Trials are underway as NABL accredited labs for performance validation.
The technology is patent granted.
The product name Pregamo is Trademark granted.
The product was introduced in TEDx SCBM talks.

How did MSH support you?

Funding support from MSH has allowed us to invest in design for manufacture to bring the product to customers/consumers at affordable costs while conforming to international standards of performance.

Team Key Members

- Dr. Aseem Mishra
- Dr. Sumona Karjee
- Neel Guria
- Arijit Pattanayak
- Gaurab Bhattacharya
- Balabhadra Kar
- Shivam Mishra

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MEITY STARTUP HUB

Minionlabs

Post Covid Solutions **Bengaluru. KA**

Startup Brief

MinionLabs UV Saaph (MUVS) – Mobile Variation is aim to be a plug & Play cost-effective UV-C based disinfecting product which can be retrofitted in ATM Rooms, Elevators, Waiting Rooms, Disinfection on the go applications, etc which is based on scientific principle of Ultraviolet Germicidal Irradiation that can disinfect surfaces of objects from pathogens like bacteria, fungicides and other microorganisms.

Ultraviolet-C has been the industry standard for sanitisation for more than half a century. MinionLabs UV Saaph brings this technology to disinfect your rooms and to step up your sanitization to next level...!!!

- Designed and made in India
- Suitable for continuous operation in the presence of people
- Safe for humans, plants and animals
- Ozone free*
- Early pilots started with ATM rooms in 2021
- Suitable for all types of indoor spaces
- Lifetime of lamps of 9000 hours (~4 years)
- Portable
- Dedicated Installation & service team
- 1 year warranty

Problem Statement

Safety and hygiene will never be the same again.
In the wake of the ongoing global COVID-19 pandemic, practices from individual masks to nationwide lockdowns are being used to restrict the virus' onslaught...
... and we believe that, even in a post-COVID world, individuals, communities and countries will look to newer, more effective ways for protection against the invisible realm of harmful pathogens

Market Opportunity

The UV disinfection equipment market size is projected to reach USD 9.2 billion by 2026 from an estimated USD 4.8 billion in 2021, at a CAGR of 14.0% from 2021 to 2026. Extensive use of UV disinfection equipment in healthcare facilities for disinfecting hospital environment and increasing demand for UV disinfection equipment to combat COVID-19 pandemic are among the factors driving the growth of the UV disinfection equipment market.

Solution Concept

MinionLabs UV Saaph (MUVS) – Mobile Variation is aim to be a plug & play cost-effective UV-C based disinfecting product which can be retrofitted in ATM Rooms, Elevators, Waiting Rooms, Disinfection on the go applications, etc which is based on scientific principle of Ultraviolet Germicidal Irradiation that can disinfect surfaces of objects from pathogens like bacteria, fungicides and other microorganisms.

Value Proposition

MUVS Mobile
Suitable for delivery services of food, groceries, postal, medical, as well as logistics, supply chain companies

Retrofittable / Portable
270-degree exposure design
30 Seconds disinfection timer
Human Detection Auto Cut-OFF
AC & DC power variations with optional battery backups
CE, ISO 15858:2016 Certification
CSIO-CSIR, IAPMO, IADFAC Tested

Business Model

MinionLabs UV Saaph Mobile is being retailed at Rs. 599/- inclusive of GST at E-Commerce, Physical Electronics Stores, etc at B2C Product. We also target channel partners like facility maintenance, operations team of various organizations for a B2B revenue generations.

Current Traction

Current Stage:
1. Have completed the POC of Portable UV Disinfection – For ATM rooms
2. Outer case Injection moulded
3. Manufactured 20 Units – Piloted with 5 x HDFC ATM rooms in Bangalore

Next Progress:
1. Have received feedbacks from HDFC Bank – Will be iterating/R&D the product based on it.
2. Trail run to meet HDFC bank demands
3. Perform R&D to achieve tuning on UV emission (Single product produces 99% efficacy in various sizes of room, environment, etc) as the ATM rooms commonly comes in different sizes of area & environments.
4. Perform R&D to achieve easy retrofittable (Installation) which should be a plug & play solution in all kinds of ATM rooms and also provides flexibility to install in other places likes Lifts, waiting rooms, etc.

How did MSH support you?

MEITY Startup Hub is supportive for the startups like MinionLabs who deal with Hardware. We utilize their Centre of Excellence & Facilities like Open IoT Lab in Bengaluru for testing and prototyping our hardware products, received SASACT financial assistance, Various Industry connects for pilot opportunities & sales and Mentorships that keeps us focused.

Team Key Members

At Present MinionLabs is a team of 11 young and senior minions having 5 decades of consolidated work experience from Amazon, Google, Intel, Cloudera, KPMG and Robert Bosch with double PhD's & master's qualification with exposure of Business, Technology, Marketing & Sales expertise.

Gokul Shrinivas – Founder and CEO, Ex-Amazonian (Cyber Security – Kindle Division), Ex-IIT Madras Research Associate (Energy), bachelor's degree in Electronics & Communication Engineering.

Jeyakumar Nallusamy – Founder and CTO, 18+ Years of Experience in SaaS & Cloud Solutions, Ex-KPMG, bachelor's degree in computer applications.

Tishampati Dhar – CDO, 15+ Years of Experience in Ai/ML Solutions in Energy Domain, Ex-Intel, Double Ph. D in Electrical & Data Science.

Ministry of Electronics and Information Technology
Government of India

MEITY STARTUP HUB

Salcit Technologies Pvt. Ltd.

Digital Health, Medical Devices **Hyderabad**

SALCIT™

Startup Brief
The Swaasa AI platform is a revolutionary approach to respiratory healthcare. At its core, Swaasa does three things. It identifies (a) if there is an underlying respiratory condition (b) whether the condition is obstructive/restrictive and (c) the level of severity. All of this is accomplished in seconds based on a patient coughing into a smart phone. The core technology is based on audiometric analysis of cough sounds using patented Machine Learning (ML) algorithm. The system has been validated through a registered clinical trial in India. Our work has also resulted in peer-reviewed publication.

Problem Statement
How to stop disease transmission chains. How to reduce business cost of COVID-19. On an ongoing basis, how to surveil susceptible populations

Market Opportunity
The TAM is 2 billion USD.
Enterprise health, Telehealth, Home health service providers
Public health centers / Community health centers / Private health centers
Manufacturing industry, Customers of IT companies and other organizations.

Solution Concept
Enhance core Swaasa™ by adding risk assessment for COVDI-19. A Point-of-Care technology to provide risk assessment for COVID-19. Self-screening by individuals and remote monitoring by healthcare provider to identify risk to stop transmissions chains.

Value Proposition
The value proposition is
Reduction in overall health budget
Reduction in test costs
Reduction in capex
Accessibility to underserved groups

Business Model
Per / Assessment:
Licence model – Based on no.of assessments in the range of 10 thousand to 10 Million
Per employee / per month for businesses

Current Traction
Reached close to 200000 COVID risk assessments
Onboarded two new enterprise customers for Core technology. 168 individual clinics / hospitals are identified as prospects.

How did MSH support you?
In acquiring more customers for core technology
Developing COVID-19 diagnostic solution - Technology development

Team Key Members
Narayana Rao Sripada – Founder
Venkat Yechuri – CEO
Baswarj Mamdgi – Solution architect