

{ **STARTUP MANTRA** } MED-TECH

Put a cap on to hear what you can't see

Optimum Data Analytics' "Bindu – Smart Cap" project aims at enabling employment by reducing learning gap for visually impaired, thus improving quality of life

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PUNE: Visual impairment is a healthcare issue that has serious socio-economic ramifications.

A lack of resources at school, college or even later in life creates a huge employment gap for persons with a visual impairment.

There are about 12 million visually impaired looking for jobs in India as of today.

If 12 million people become employable, it's not just an individual benefit, but a national benefit.

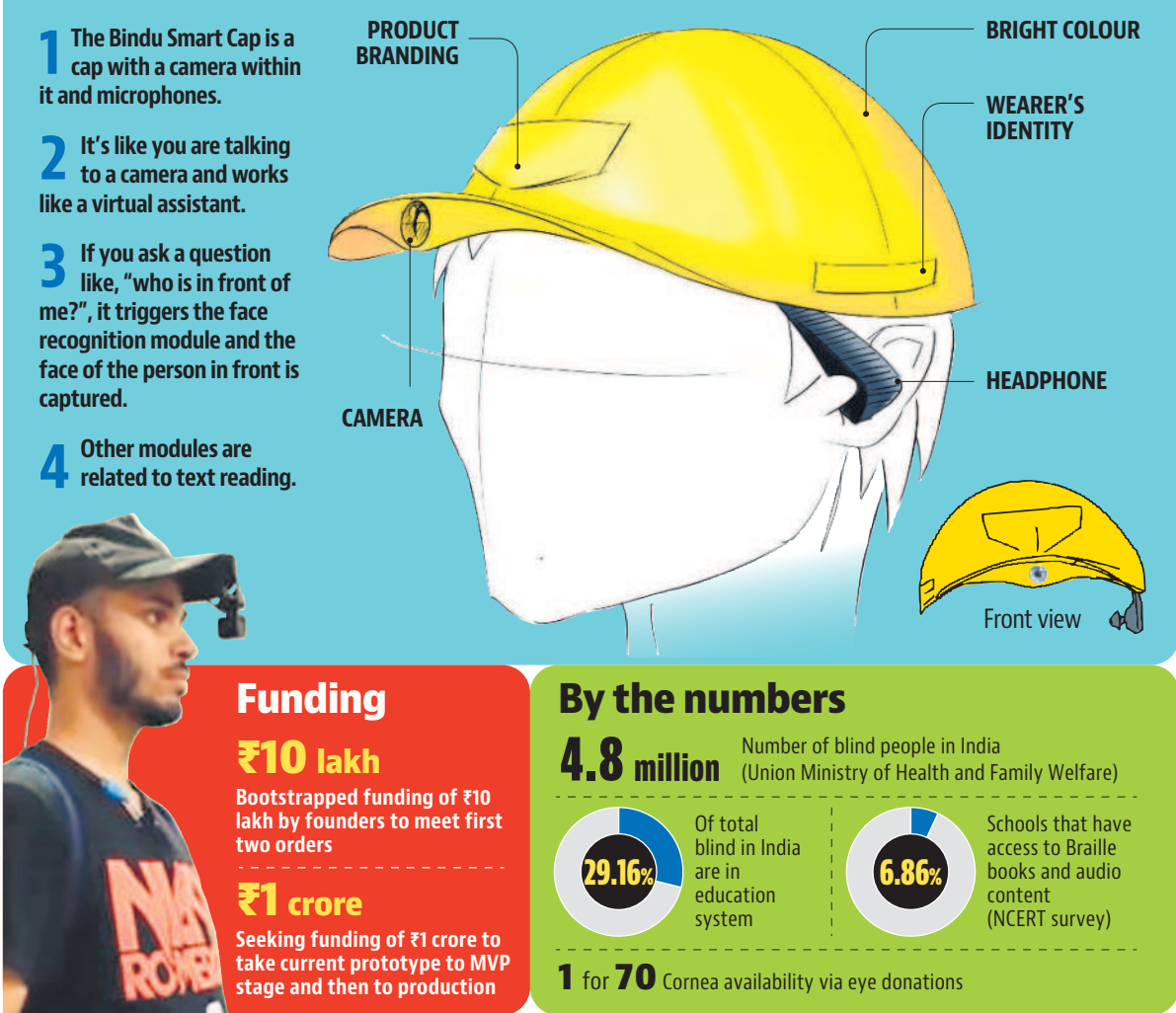
Rutuja Udyawar, a statistician by profession, realised this and launched the "Bindu – The Smart Cap", through her startup, Optimum Data Analytics.

Says Udyawar, "We were working on project Bindu we could see that there are two types of visually impaired. One, those who are blind at birth; and the others, who suffer vision loss due to disease or age-related issues. It's a crucial problem in India. Those that lose vision at a later stage don't even understand braille."

In the beginning...

Udyawar is passionate about bridging the gap between industry and academics. Her company, Optimum Data Analytics is associated with various educational institutes. Through these collaborations she is upskilling students by conducting courses, seminars, workshops and webinars. Says Udyawar: "Being a statistician, I always played with data. I

How the smart cap works



started Optimum Data Analytics in February 2017. We started off with ML and AI services. By the end of 2019, While I was working on machine learning and artificial intelligence projects, one of my interns - who used to assist the visually impaired to write exams - narrated the difficulties faced by the blind. We decided to make use of technology for a noble cause. We named it 'Bindu – Smart Cap' because Bindu means 'Focus' in Sanskrit."

What followed was an extensive user survey, including potential users at hostels, insti-

tutes and even ophthalmologists. Meetings with advisors and subject-matter experts came next.

"There were two main take-aways," says Udyawar. "First, visually impaired are completely dependent on the Braille script. And second, they rely mostly on sound to get through life. The lack of reading resources naturally creates a huge employment gap. Products available in India for the visually impaired have been primarily developed in the western world and hence, not very affordable. All these facts

helped us reach our current design," she said.

The Bindu Smart Cap product line aims to channelise strengths of the visually impaired leveraging technology to help them lead productive lives. It processes images for the visually impaired and then, describes the images via a speaker or headphone. It can also process and read news.

"We are planning to add regional languages soon so the person can use the product without learning any new language or Braille. The aim is for Bindu - Smart Cap to make the

visually impaired skilled and employable," says Udyawar.

To market, to market...

Commenting on available assistive devices in the market for the visually impaired, Udyawar says: "There have been significant advancements in computer vision and language models. Microsoft's Seeing AI and CaptionBot are developed for the visually impaired, but they are not yet available in the Indian market. Screen readers for digitised material are available, but they can't effectively read text in images. The mate-

Bindu - smart cap: core team

RUTUJA UDYAWAR
Chief architect
BSc and MSc in Statistics from Mumbai University and worked at Tata Motors in the quality systems and reliability department.
MS in Applied Statistics at Michigan State University.



NIKHIL BUTALA
Co-founder
Technology commercialisation and business development professional
MBA from Purdue University, USA



AJAY KASHIKAR
Technology consultant:
30 years of experience in manufacturing, and IoT

MANJIRI GOKHALE JOSHI,
Director, corporate development
Also founder-director of Maya CARE, social venture for the elderly and disabled



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RUTUJA UDYAWAR,
Bindu – the Smart Cap

than 90 per cent accuracy. We are now focussing on Hindi and Marathi.

AI technology is not developed for all languages and hence, it needs huge data, especially for regional languages. We have done trials on some healthy users as a few psychologists warned us that the information exposure to real-users may impact them. It can be overwhelming for them to process this much information. Hence, we are starting initial adoption, testing and feedback with Maya CARE foundation. We are giving 10 units to them and data collection will continue over the next two months.?"

The Saiguru Seva Sanstha Narhe hostel for visually impaired girls are also early adopters of Bindu – The Smart Cap.

Considering lockdown situation, data collection will be done in the Pune region for the next five months and post-lockdown, all of Maharashtra will be covered.

"We expect this to happen by March 2022 and other cities in India by December 2022," Udyawar claims.

"These products have great value in helping with severe mental health issues that have impacted the elderly with failing eyesight and therefore, loss of emotional and intellectual stimulation. Maya CARE is proud to be an early adopter of this transformative technological innovation," says Manjiri Gokhale Joshi, cofounder,



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MANJIRI GOKHALE JOSHI,
co-founder, Maya CARE Foundation

Maya CARE Foundation and a director for the Bindu – The Smart Cap project.

The ZS prize

Says Rutuja Udyawar: "When we got to know about the ZS Prize healthcare competition we applied and got selected. We got good mentorship from the ZS Prize foundation for six months. Mentors from the ZS Prize also helped us learn about marketing. We then started talking to employers who recruited visually impaired people. We got a good feedback and started improving our product."

"When we launched ZS PRIZE, our mission was to provide a platform that can help promote high impact ideas created by students and entrepreneurs from across India. And seeing solutions like Bindu Smart Cap,

"I am convinced of the strong entrepreneurial mindset across India which has the intent for solving large healthcare issues at affordable prices that can scale," says Sanjay Joshi, regional managing principal and Asia head, ZS

"Assistive device for the visually impaired is not a new concept – but providing it at a price point where many can afford it and aiming to improve an individual's productivity at the workplace is definitely a transformative concept," says Gunjan Goyal, associate principal, ZS and mentor, ZS Prize.

Cyclone Tauktae in Arabian Sea has Pune on yellow alert

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PUNE: Pune received light rain on Friday, a possible foretaste of what is to come in the next few days, based on the fact that as per the India Meteorological Department (IMD) forecast, this is the third consecutive year a cyclonic storm is hovering over the Arabian Sea close to the Indian coast.

Pune, on Friday, reported 0.9 millimetres of rainfall in Shivajinagar and traces of rain at Lohegaon and Pashan.

IMD has issued a forecast of moderate rain for Pune city (15.6mm – 64.4 mm) on May 15 and May 16, with isolated heavy (64.5mm-115.5mm) rainfall likely in the ghat areas. Thunder, lightning and gusty winds (30-40 kmph) are also likely on May 15 and May 16.

"We have issued a yellow alert which means that citizens and authorities have to be alert. There may be a partial reduction in visibility, and slippery roads during periods of intense rain spell in some areas. There can also be a major disruption of traffic flow.

"Moderate water logging in low-lying areas adjacent to river banks is also possible, with a possibility of trees falling/uprooting on May 15 and May 16," said Anupam Kashyapi, IMD.

He further added that there is a possibility of minor landslides in the elevated hilly areas near Pune on May 15 and May 16.



On Friday, Suksagar nagar, Katraj was one of several areas in the city that experienced rainfall. IMD has forecast more rain in Pune on May 15-16.

RAHUL RAUT/HT PHOTO

Cyclone watch

In 2019, Cyclone Vayu moved parallel to the coast and then later weakened just before landfall in Gujarat. In 2020, Nisarga hit Maharashtra in May. And this year, a low-pressure area has a depression and later is forecast develop into Cyclone Tauktae in the Arabian Sea.

Dr Mrutyunjay Mohapatra, director general of Meteorology, IMD, said that the forecast as of now is that the cyclone will travel towards Gujarat. "The exact path and intensity will get clearer in the next

24 hours. We have issued a high alert in Gujarat. In Maharashtra the impact will be only of strong winds and rainfall," said Mohapatra.

As of Friday, the low pressure area over Lakshadweep and adjoining southeast Arabian Sea has moved east-north-eastwards, and concentrated into a depression.

"It is very likely to intensify into a deep depression during the next 12 hours (Friday evening) and into a cyclonic storm during the subsequent 12 hours (May 15 morning). It is very likely to reach near the Gujarat

coast by May 18 morning," said IMD officials.

Vineet Singh, researcher at the Indian Institute of Tropical Meteorology (IITM), who is currently studying cyclones, said, "It is related to the wind pattern in the mid- to upper-atmosphere, say at a height of five to 10km, which governs a cyclone track in general."

"In the last 40 years, for the first time, four consecutive years (2018, 2019, 2020 and 2021) will have a cyclone in the Arabian Sea, in the pre-monsoon season. If this cyclone hits Gujarat with the least cyclonic

storm strength, then for the first time since 1980, a cyclone will hit Gujarat in May, with strength of wind speed at least 65kmph as per data by the weather department," said Singh.

Monsoon over Kerala likely on May 31

As per IMD, this year, the onset of the southwest monsoon over Kerala is likely to be on May 31. IMD said it is difficult to say when the monsoon will reach Maharashtra. Conditions will get clear after the dissipation of the cyclonic storm currently over the Arabian Sea, said officials.

SynThera Biomedical wins national award

PUNE: SynThera Biomedical, a healthcare startup incubated at the Venture Centre NCL, has received the National Startup Award 2021 for its PoroSyn technology, from the Technology Development Board of the Department of Science and Technology.

This national award for technology start-ups is given for development of promising new technology with potential for commercialisation, carries a cash prize of Rs15 lakh.

"This prestigious award is a tremendous recognition of our efforts to conceptualise, develop, manufacture and commercialise world-class healthcare technologies in India. We greatly appreciate the strong support we have received from so many individuals and entities during our journey so far," said a SynThera statement.

SynThera Biomedical recently received approval from the Central Drugs Standards Control Organisation (CDSCO) to commence pilot human clinical trials on its proprietary patented bone graft substitute product PoroSyn. The trials will be carried out over the next two years.

Peak.ai to recruit software engineers for Pune office

PUNE: Peak, a decision intelligence company, announced that it will be hiring software engineers for its Pune office. The business currently has 40 employees based in Jaipur and will be looking to nearly double that number this year.

Peak's recent Series B funding round accelerated its global expansion plans. Peak will move from recruiting mainly software engineering to hiring across data science, marketing, customer success, and HR - to have a full commercial hub in India.

Atul Sharma, chief technology officer at Peak,

MCCIA's startup committee invites EdTech firms for monthly interaction

PUNE: The Incubation and Startup committee of the Maharashtra Chamber of Commerce, Industries and Agriculture (MCCIA) has invited EdTech startups to participate in its monthly interaction meeting scheduled on May 21. The last date for applying for this session is May 16.

Shortlisted startups will get an opportunity to share business ideas to sector experts, stakeholders and investors. Guest speakers for this session are Dr Vidya Yeravdekar, principal director, Symbiosis Society and executive board member of MCCIA; Bharat Agarwal, executive director, Vishwakarma University and Chair Person of MCCIA Higher Education and Skill Development; and Rishi Kapal, Edtech and innovations expert. In April, the committee held an interaction with healthcare startups.

GUEST SPEAKERS INCLUDE VIDYA YERAVDEKAR, PRINCIPAL DIRECTOR, SYMBIOSIS SOCIETY; BHARAT AGARWAL, CHAIRPERSON OF MCCIA HIGHER EDUCATION AND SKILL DEVELOPMENT

College students seek fee reduction due to pandemic

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PUNE: With the next academic year to start soon, many undergraduate and graduate students in Pune have sought the intervention of state education authorities and college management to reduce admission and college fees.

Like last year, the students are worried that lockdowns and

restrictions have severely hit the financial condition of their families and reducing college education expense is the only way forward for them to continue their studies.

"I completed my graduation in Science last year and took a year-long gap due to Covid-19 pandemic. I am planning to take admission for post-graduation this year, but the fees for some courses in private universities

and colleges are too high. The state education department should take steps to make college education possible for those from all economic strata," said students Ketaki Ghanekar. Savitribai Phule Pune University (SPPU) will start the second semester from next month. While the exams are taken online due to the Covid situation, admission for new courses will start by August.

Kuldeep Ambekar, student and president of Students Helping Hand organisation, said, "Many students come from rural areas and cannot afford fees because of their economic situation. Some have to leave their studies because they cannot pay fees. We have written to the education department to address the issue."

Pratik Mhaske said, "I have completed my diploma in Com-

puter Science and want to pursue a graduation degree. I did not take admission last year due to Covid pandemic, but the fees for courses this year is high."

Rajendra Zunjarrao, principal, Modern College of Arts Science and Commerce, Shivajinagar said, "We have received request from students on reducing fees or waiver, but the final decision lies with the state higher education department."

SPPU WILL START SECOND SEMESTER FROM JUNE. EXAMS ARE ONLINE DUE TO COVID, BUT ADMISSION FOR NEW COURSES WILL START BY AUGUST