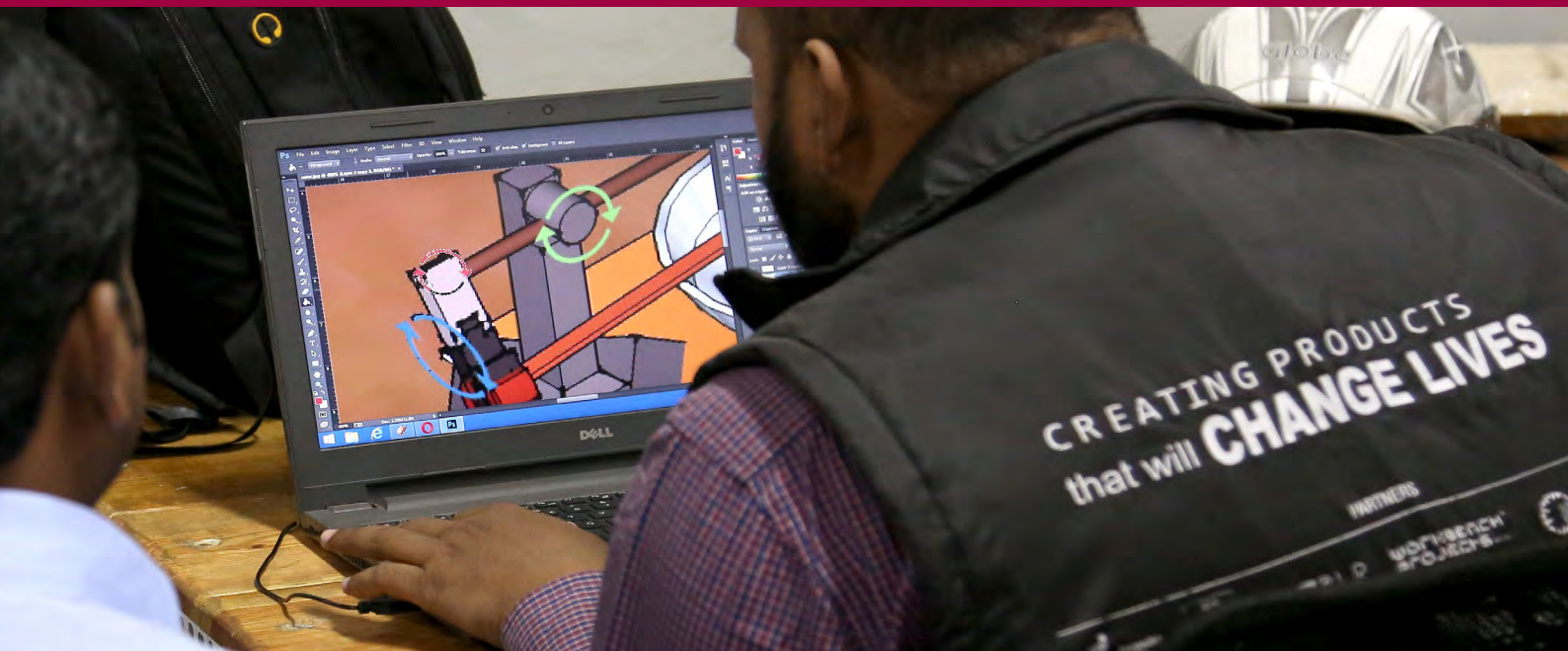


# ENABLE **makeathon**

IDEATION TO IMPACT

## CO-CREATION MAKER TEAMS



**12** | **60** | **USD 50,000+**  
CHALLENGES | DAYS | IN BENGALURU AND LONDON

**#enablemakeathon**

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Global  
Disability  
Innovation  
Hub

## WHY THE ENABLE MAKEATHON?

The ICRC supports a large number of persons with disabilities (PWDs) across the world and has active physical rehabilitation programmes in more than 28 countries. Most of these people – men, women as well as and most unfortunately, thousands of children – are in rural areas and from less privileged communities. The ICRC's support and assistance helps many of them cope with their daily challenges and live a life of dignity. The need to promote sustainable and affordable solutions for persons with disabilities is therefore at the heart and soul of the Enable Makeathon.

## WHAT IS IT ABOUT?

The Enable Makeathon aims at building an ecosystem of partnerships with impact funds, corporates (particularly product innovation, technology and medical companies), social enterprises, incubators and accelerators, not-for-profits, academic and public policy institutions, students, designers as well as the Indian authorities and various state governments to prototype devices that will address physical disabilities in rural India and around the world. The solutions developed will take the form of early prototypes that effectively illustrate the functionality and potential look of a product, proving that the theory behind the idea actually works. To ensure that the early prototypes can make it to the next level, i.e. be developed further and mass produced for customers, the ICRC in collaboration with its partners, provide technical, financial and business support.

## WHO ARE THE ORGANISERS AND PARTNERS?

The Enable Makeathon 2 (EM2) is a collaborative initiative of the ICRC and several partner institutions, occurring simultaneously in London and Bengaluru bringing together the best of innovation and technology from both these locations. Anchored by the ICRC and the Global Disability Innovation (GDI) Hub, along with institutions such as Association of People with Disability India (APD), Applied Singularity, Formulate IP, GHL, Innovation Alchemy, MoveAbility, Global Shapers Bangalore Hub, IKP Eden, Social Alpha, NSRCel, Axilor Ventures and Microsoft Accelerator.

The Makeathon has the dual goal of acting as a launching pad for the creation of the latest generation of devices that can be deployed globally by the ICRC and other players to address the needs and issues of beneficiaries affected by locomotor disabilities, while making these same instruments affordable for the 'bottom-of-the-pyramid' (BOP) demographic worldwide. It will also help build an ecosystem of entrepreneurs, partners and practitioners, working on the creation of products for persons with disabilities at the BOP.

## GOAL AND PURPOSE

The Enable Makeathon has at its heart the intention to not just innovate for new solutions for PWDs but to draw together institutions, individuals and companies to invest in the prototypes and create a thriving ecosystem of innovation addressing the needs of PWDs. This is essential to further develop, test, and complete regulatory certification to turn prototypes into marketable products. The final goal is to market these products in India and overseas so that PWDs are able to access and afford assistive devices that enable them to integrate into all aspects of life.



Focused prototype development with the guidance of mentors and experts

## THE SOLUTION MAKERS

The 60-day programme is taking place between December 2017 and February 2018 for teams from all around the world with simultaneous co-creation camps in Bengaluru and London. Teams will work towards finding innovative solutions to 12 challenges that would ultimately lead to the following desired results:

- Help initiate a global movement on disability innovation, led by PWDs which brings together an ecosystem of committed partners
- Facilitate the exchange among innovators to foster and enable innovative thinking across a broad range of disciplines to build new solutions
- Produce, test and finance 5 new innovative products, processes or services that facilitate accessibility at scale for PWDs

*Discover below the different teams and what they are trying to achieve while also addressing the challenges of Enable Makeathon.*



**Link to Video:** [https://drive.google.com/open?id=0B\\_Ub63in4e1-M3BUWkiUU1dlM3c](https://drive.google.com/open?id=0B_Ub63in4e1-M3BUWkiUU1dlM3c)

**Size of Market Opportunity:** Global Electric Wheelchairs Market size in 2015 was valued at \$1.5 million USD growing at CAGR of 17.1% to reach \$4.8 million USD by 2022. India is seen as a big market for the locomotor disability cases, there are around 20 million disabled people living in the country, out of them about 11 million are locomotor disabled. The ratio of locomotor disabled is highest in the country. There are around 1,046 people out of every 1,00,000 in the rural regions whereas; there are about 901 out of every 1,00,000 in the urban population. The Indian wheelchair market is pegged up to 15 million USD and it is estimated a growth of 10% CAGR for the coming 3 years.

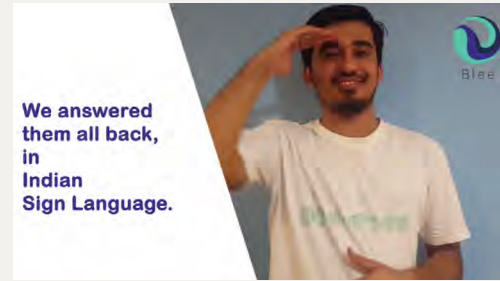
## TEAM GLASS CHAIR

This is an intelligence solution, in the form of a smart glass for people with disabilities relying on electric wheelchairs. This product will be an everyday life assistant for PWDs, helping them with their daily activities and interactions.

Comprising of four members, two of whom are students, the team has skills across software engineering, hardware engineering, business and IT and also has experience with incubation.

**Team Composition:** Claudiu Leverenz- Technical University Munich, Aashish Trivedi - Technical University Munich, Konstantin Madaus- Technical University Munich, Deepesh Pandey- Technical University Munich

**Location:** Munich, Germany



**Link to Video :** <https://drive.google.com/open?id=0B3cPXtWdA0SPSHVaV19kZnp0MjA>

**Link to Powerpoint:** <https://drive.google.com/open?id=0B3cPXtWdA0SPMFVtWDM3VGdDTVE>

**Size of Market Opportunity:** The market for the hearing impaired devices is valued at USD 6,183 million in the year 2015 and is expected to reach USD 8,373 million by the end of 2020 growing at a CAGR of 6.3% during 2015-2020.

## TEAM BLEETECH

Bleetech is the low-cost version of an encyclopaedia, where users can ask questions on a mobile platform (either in sign language or in English), and they receive answers in Indian sign language. The company also has other products including Blee Watch which can help notify users of emergency sounds, sending out notifications. The target users are the hearing impaired population. The team includes a person with hearing impairment who is the front end developer and looks at tech support.

**Team Composition: Education:** Jahnvi Joshi, Nupura Kirloskar, Akhil Kumar Wachhani, Snehal Vichare.

**Location:** Mumbai, India



**Link to Video :** <https://drive.google.com/open?id=0B746gqoisasac2hJY1R5LWpYdkE>

**Link to Powerpoint:** <https://drive.google.com/open?id=0B746gqoisasaVjzVZ1Mjh2MUk>

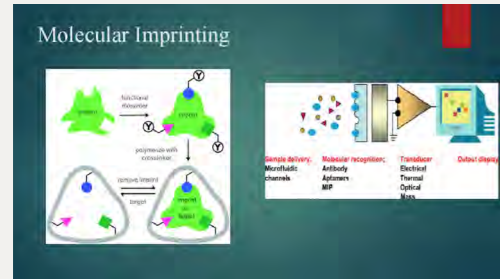
**Size of Market Opportunity:** The Global Elderly and Disabled Assistive Devices Market is expected to be valued at USD 27 billion by the end of 2024 growing at a CAGR of 7.4% from 2015-2024.

## TEAM WELAVA

The product is making tourism more accessible and memorable to the differently-abled through universal design solutions by entry ticket redesign. The key features include embossed graphics inspired by the heritage site with braille supported text and directional maps, high colour contrast for low vision visitors and profile cutouts for those visually impaired, aroma of tomb (stick on, on the ticket), way finding and spots mapped using QR code and QR code with information about the monument which can be read by the users' phone and monument picture along with the ticket.

**Team Composition:** Bhawna Welturkar, Abhishek Srivastava

**Location:** New Delhi, India



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**Link to Powerpoint:** <https://drive.google.com/open?id=0B746gqoisasaVjzVZ1Mjh2MUk>

**Size of Market Opportunity:** 285 million people are estimated to be visually impaired worldwide of which 39 million are blind and 246 have low vision, according to World Health Organisation statistics. India has the world's largest blind population at about 12 million.

## TEAM AUTOBOTS

This product is a sensor for pregnancy diagnosis for the visually impaired with molecular imprinted diagnostics for detecting pregnancy for blind people.

The team consists of 4 members with a background in bioelectronics and material science, business and biology.

**Team Composition: Education:** Shibu Antony – B. Tech Biotechnology from VIT, Devanjan Chakravarty – B. Tech Biotechnology from VIT, Jishnu Nair – B. Tech Biotechnology from VIT, Arundhati PS – B. Tech Biotechnology from VIT

**Location:** Vellore, India



**Link to Video :** [https://drive.google.com/open?id=0B7sBsiRb\\_gWqEHNKWE01aFIKRWM](https://drive.google.com/open?id=0B7sBsiRb_gWqEHNKWE01aFIKRWM)

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**Size of Market Opportunity:** The market for assistive devices and technology for the disability sector is pegged at Rs 4,500 crores in India.

## TEAM NONSPEC

Nonspec has designed and developed a below the knee prosthetic system that is dynamic, affordable, lightweight, adjustable, and can be mass produced. The pylon material used can fit any patient, 12 to 70 years old, as it is rapidly adjustable in terms of height, width and the angles as per the patient's specifications. The skeleton is designed with interchangeable "off the shelf" components that can be assembled into a prosthetic that is the size of the patients' needs. The ability of the device to grow increases its usable life from between 6-8 months to up to 4 years in paediatric cases. The target users for this project are persons with lower limb amputation.

**Team Composition:** Nilay Desai, Kalyani Kadkol, Sagar Honakeri

**Location:** Greater Boston Area, USA



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**Link to Powerpoint:** <https://drive.google.com/open?id=0B1zQuTUE2h23d0FJVjkwUXBvdjA>

**Size of Market Opportunity:** The market for disability-assisting devices and technologies is pegged at Rs 4,500 crores in India.

## TEAM MITRAN

Mitran 1.0 is a walking cane containing gas struts to aid in walking up the stairs more easily. The legs of this product would retract and extend to provide stability for the person while climbing and descending. This product will help with stability at all possible gradients. The target users are those who walk with the assistance of a cane (from amongst the elderly and PWDs). One of the team members holds patents for specific attributes and components of a wheelchair. The team have experience in programming, product design and other technical expertise.

**Team Composition:** R. Ramakrishnan – M. Tech from VIT, Shubham Gupta – M. Tech from VIT, Avinash Prahlad Joshi – M. Tech from VIT, Abhijat HB – M. Tech from VIT

**Location:** Vellore, India



**Link to Video :** <https://drive.google.com/open?id=0B746gqoisasaVjzVZ1Mjh2MUk>

**Link to Powerpoint:** <https://drive.google.com/open?id=0B746gqoisasaVjzVZ1Mjh2MUk>

**Size of Market Opportunity:** 285 million people are estimated to be visually impaired worldwide of which 39 million are blind and 246 have low vision, according to World Health Organisation statistics. India has the world's largest blind population at about 12 million.

## TEAM WORKBENCH

The Reader project is a two piece prototype integrating hardware and software components with a software that is an offline application, developed for effective conversion of text to speech, enabling visually impaired students to read any book. The target users for this group are persons with visual impairment.

**Team Composition:** Ranjitha GN, N V Balasubramanyam, Ojasvi Gupta, Manickavelu M

**Location:** Bengaluru, India



**Link to Video :** <https://drive.google.com/open?id=0BzEMldvjcsE9eC1BcXNURzVrd28>

**Link to Powerpoint:** <https://drive.google.com/open?id=0BzEMldvjcsE9Vme0bDRHeV12TEU>

**Size of Market Opportunity:** The market for the hearing impaired devices was valued at USD 6,183 million in the year 2015 and is expected to reach USD 8,373 million by the end of 2020 growing at a CAGR of 6.3% during 2015-2020.

## TEAM UNICOM SOLUTIONS

A mobile application which focusses on unifying all forms of communication into a single platform where a deaf person can communicate her/his message using sign language which will then be transferred to another person by converting the message into either a text or voice and vice versa, etc. All it requires is a smartphone.

**Team Composition: Education:** Rahul Tripathy- VIT, Sahaja Mahanty - VIT Ankit Dutta - VIT **Location :** Vellore, India



**Link to Video :** <https://drive.google.com/open?id=0B5che1wzkW7neWtqcWZKazNldDg>

**Size of Market Opportunity:** The market for disability-assisting devices and technologies is pegged at Rs 4,500 crores in India.

## TEAM ENABLE INDIA

Encare App. is an application that provides users with access to caregiver information, location and contact information. The goal is for the app to become a "one stop shop" for all support and services needed. Any person with a need for extra assistance, whether at home or at work is seen as the target user. The team focusses on creating assistive technologies in the livelihood space.

**Team Composition: Education:** Santhosh Kumar studied at Veer Kunwar Singh University, George Sebastian, Shiva Kumar- Veer Kunwar Singh University, Pradeep G

**Location:** Bangalore, India



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**Link to Powerpoint :** <https://drive.google.com/open?id=0B63p5TBdPbTidk13eEJ0WwK1Yk0>

**Size of Market Opportunity:** CPIO under census 2011 - about 1.5% to 3% of locomotive disabled people in India are wheelchair users i.e around 80,000 - 1,60,000. Wheelchairs form the largest segments of the unaddressed market at USD 60 million.

## TEAM TRIDOTS

This product is an electrically powered three wheeler which enables driving directly from the wheelchair. Affordable, comfortable and safe, the wheelchair provides independent access to users. The team comprises of members with expertise in product based engineering, including in the disability field with designing and modifying of wheelchair accessible electric cars.

**Team Composition: Education:** Sakthivel Thayappahn- B.E Mechanical Engineering, SKP Engineering College, Jegadesan Saravanan - IIT Madras **Location :** Chennai, India



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**Link to Powerpoint:** [https://drive.google.com/open?id=0B5lmjfsBi\\_Tl19PMW5rZFNFTzA](https://drive.google.com/open?id=0B5lmjfsBi_Tl19PMW5rZFNFTzA)

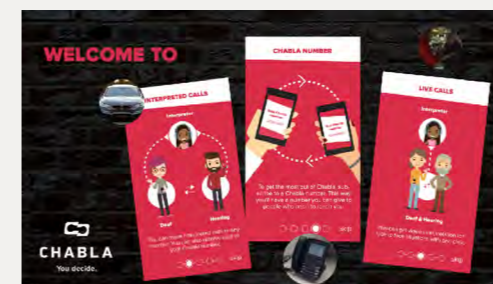
**Size of Market Opportunity:** The market for prosthetics or artificial body parts in India is estimated to be \$7.5 billion (2009).

## TEAM AMPARO

Amparo Confidence Socket is a prosthetic socket made of thermoplastic which can be remoulded easily according to growth or change with each individual. The model involves, a visit from an Amparo employee to the patient's home who can remould the socket using tools that can be carried in their bag. Once remoulded the socket is back to regular use. The second part of this product is called the Amp league. This is a mobile rehabilitation process in which technology is used to connect health professionals, community organisers and persons with physical disability.

**Team Composition: Education:** Lucas Paes de Melo - European School of Management and Technology, Berlin, Wesley Teerlink- Penn State University, Felix Dietrich- Hasso Plattner Institute, Eva Lücke

**Location :** Berlin, Germany



**Link to Video :** <https://drive.google.com/open?id=0B10c0rJtNa7NMXdJVUUh2bjdSZ0k>

**Link to Powerpoint:** <https://drive.google.com/open?id=0B10c0rJtNa7NTGQ2V1hEeXk2Q2M>

**Size of Market Opportunity :** The language services industry - which encompasses interpreting, translation, localisation, and the accompanying technologies - is worth \$33 billion globally, according to the latest market size estimates from Common Sense Advisory.

## TEAM CHABLA OY

Chabla Oy is a Mobile Video Interpreting Service - the first mobile app service that instantly connects the user to a live interpreter and enables deaf people to make and receive calls to and from anyone. Chabla Oy connects the user to an interpreter with the proper language skills needed in the situation, supports most sign languages, is accessible 24/7 and the calls are free between users. One of the team members is hearing impaired and a sign-language user.

**Team Composition:** Marko Vuoriheimo - University of Jyväskylä, Mikko Palo, Eeva Pekkola, Iiris Lehtinen - University of Lincoln

**Location:** Helsinki, Finland



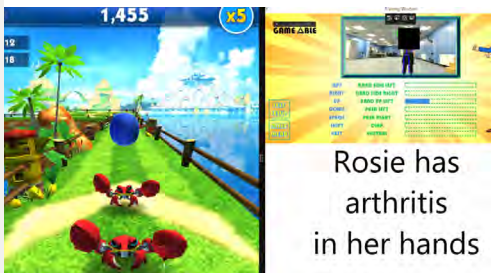
**Link to Video :** <https://drive.google.com/open?id=0B6KOnV8lrpK1Qm5LWFdKcnU0QkU>

**Size of Market Opportunity:** The sensory impairment devices category achieved 55.4% of the total market and a value of nearly \$6 billion USD in 2010. The global walking assist device market is expected to reach USD 6.57 Billion by 2020, at a CAGR of 3.9% from 2015 to 2020.

## TEAM TORCHIT

Saarthi, is a hardware solution which can be attached to a walking cane to help people with visual impairment. This product helps sense the surroundings to navigate easily whilst detecting obstructions both horizontally and vertically. The user senses the obstacles through feedback in the form of a buzzing sound and vibrating sensations. The target users for this product are the visually impaired population and the elderly.

**Team Composition: Education:** Hunny Bhagchandani- Pandit Deendayal Petroleum University, Gandhinagar, Kshitij Shah- Pandit Deendayal Petroleum University, Gandhinagar



Rosie has  
arthritis  
in her hands

**Link to Video :** <https://drive.google.com/open?id=0B6Wmj0zvVcZPNmtxTm1kZmJROXc>

**Size of Market Opportunity:** In 2003, Microsoft Corporation commissioned Forrester Research, Inc. determined that 57% of computer gaming users are likely or very likely to benefit from the use of accessible technology.

## TEAM GAMEABLE

GameAble is a software which can provide access to disabled people enabling them to play video games like their peers. It features gesture recognition-based control software. The main aim is to act as a keyboard replacement for those who have trouble with fine motor control difficulties. The target users for this product are children and adults who are physically disabled.

**Team Composition:** Rebecca East, Carly Booker, Adam Shortland- The University of Sheffield, Richard Miles

**Location :** London, UK



**Link to Video :** <https://drive.google.com/open?id=0BywSbTJYy6V-ZXl5SSXlFUXdLbE0>

**Size of Market Opportunity:** The Nooks are eligible to any rural community around the world.

## TEAM DEFY

Community organised design for inclusion where community organisations build inclusion from the bottom up into Nooks - which are community organised learning spaces designed by Project DEFY.

**Team Composition:** Abhijit Sinha- Vellore Institute of Technology, Megha Bhagat- National Law School of India Universit. Graham Varley- Westhill College, Rajiv Shankar- R. V. College of Engineering

**Location:** Bengaluru, India



**Link to Video :** [https://drive.google.com/open?id=0B711NKEMFB-\\_a0dyNjRnVFdiZW8](https://drive.google.com/open?id=0B711NKEMFB-_a0dyNjRnVFdiZW8)

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**Size of Market Opportunity:** There are about 26 million PWDs in India as of 2016. 17 million of these people are non-workers. About 69% of PWDs live in rural areas.

## TEAM FOR GROWTH

For Growth is a product which acts as a marketplace connecting PWDs to various jobs/internships using Artificial Intelligence combined with human curation to help persons with disability elevate their career and independence.

**Team Composition:** Sri Vigneshwaran - Anna University, Chennai

**Location:** Bengaluru, India

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For further details Visit <http://www.enablemakeathon.org/> or speak to

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