



Empowering Vision Beyond Sight

CASE STUDY

Torchit's social entrepreneurship brought in a revolution and impacted millions of lives



The Story of the Start

- Torchit Case study

Next Gen Entrepreneurship Fellowship

Background

Hunny Bhanchandani is an industrial engineering graduate from Pandit Deendayal Petroleum University, Gandhinagar. He was also a fellow at the Royal Academy of Engineering, UK and the MIT Media Lab. Coming from an engineering background, Hunny always wanted to serve the community with his technical understanding.



During Hunny's internship with the social sector back in 2013-14 as an engineering student, he witnessed a visually impaired person in a terrible accident. The incident left a dent on his heart and mind. His **social internship** at the Blind People's Association (Gujarat), made him realize how an inaccurate assistive device almost caused one of his visually impaired friends his life.



He eventually came up with a **prototype** received rave reviews from the users at the Blind People's Association. Hunny displayed this prototype to his University Professor at the end of his internship, who showcased it at an engineer's forum. Hunny ended up receiving a **INR 25,00,000 (USD 33,000) grant** from the Government to develop this prototype.



This led to the birth of **Torchit** and since then, there was no looking back..



The Mission

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The Mission

Torchit's mission is to create a **sustaining eco-system** that fosters **inclusive growth for the-differently abled persons** through enabling **assistive mobility and accessibility, financial sustenance, and literacy.**

TorchIt was formally launched in 2017 and incubated at CIIE, IIM A as a **tech-for-good startup**. The mission is to **empower the PwD community** (Persons with Disabilities) to lead a dignified, independent & meaningful life through design & development of state-of-the-art technological innovations using **Artificial Intelligence & Machine Learning.**

ACCOLADES

We won more than 50+ national and International awards. Some of them are



Top 5 Promising Startups



Awarded INR 1 cr. for expansion in African Market



Amongst Top 6 Startups



Amongst YS Tech30, 2019



Torchit has been facilitated with more than 40 international and national awards for 'Saarth'



Amongst Top 10 Innovative Startups



Amongst Top 7 Startups Globally



The Mission

Rewards and Accolades:

Torchit has won more than 50+ national and International awards. For one of their products **Saarthi**, Torchit has been felicitated with more than 40 national and international awards.

 Social Innovation Winner, IIGP 2.0	 Millennium Alliance Award for expansion in African Market	 Best Innovation Award, IIT Kharagpur	 Top 6 Startups
 Amongst Top 10 Innovations, NASA	 Top 7 Startups in Well-being Sector	 Top 5 Promising Startups	

Some notable mentions are:

- ✓ **National Award** from HE President of India, 2021
- ✓ **Innovation Award** from HE Governor of Gujarat, 2018
- ✓ **Dream Start-up India** – Top 5 Promising Start-ups
- ✓ **India Innovation Growth Program 2.0** – Winners
- ✓ **YourStory Tech Sparks** – Tech30
- ✓ **Yourstory - 50 Disruptive start-ups** in 2019
- ✓ **NRDC – 10 Most innovative Start-ups**
- ✓ **Hello Tomorrow Global Summit** – Top 7 Start-ups Globally

Torch-it has also received Recognition from Millennium Alliance, US AID, Technology Development board and FICCI along with an INR 1 Cr (USD 1.33 K) Grant for expansion in the African Market.

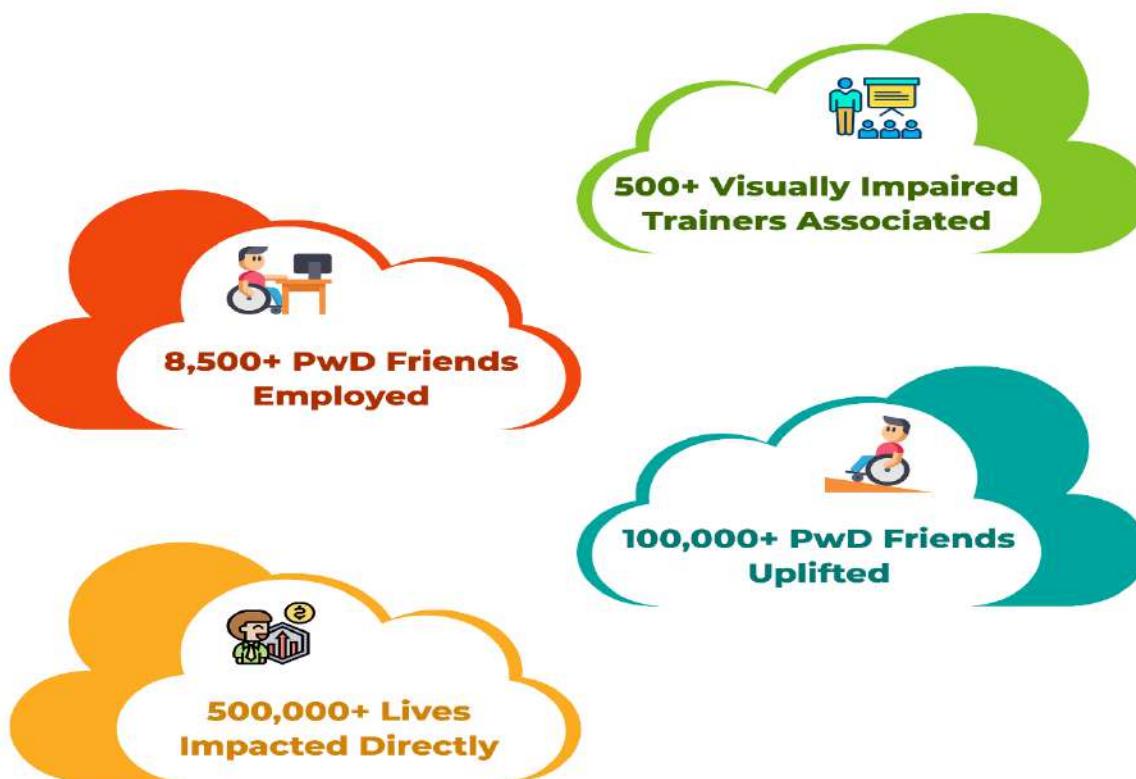


A central illustration depicts a white rocket ship with a red pointed nose cone and two red fins on its side, launching upwards. A bright orange-yellow flame is visible at its base. The rocket is set against a vibrant yellow background that is dotted with small, white, four-pointed starburst shapes. The overall composition suggests a sense of motion and achievement.

The Impact

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The Impact



TorchIt is the world's **only** company "**By the PwD & For the PwD & To the PwD**" i.e. all their product assembly and operations including training is led by Peoples with Disabilities from understanding the need & providing feedback on developed products to assembling of the devices to training being provided to the new users.

Their motto is to **empower the community** through **assistive aids** along with **frameworks** where they can find employment to **build sustainability** in their lives, personally and financially.





The Approach

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The Approach

Torch-it aligns itself with 4 of 17 **United Nations – Sustainable Development Goals.**

SUSTAINABLE DEVELOPMENT GOALS



The Approach

They have taken up the mission to **empower the Differently Abled community across the world** in order to work towards a better, sustainable & judicial society. All their products are targeted to be simplistic, effective & affordable to create a major impact at the grassroot level and thereby helping out the masses at the bottom of the pyramid.



Innovations for a cause:

Torchit is transforming lives by creating smart **assistive technology** for the differently-abled across the globe through **IoT**.

Designs that put people first:

With **human-centric** product designs and features, their approach is firmly rooted in serving the basic human needs of people with disabilities.

Solutions for equality and inclusion:

They envision and hope to build a future that has **equal opportunities** for the growth and development of all individuals.





The Key Challenges

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The Key Challenges

Lack independence in their daily tasks due to lack of Sight/mobility/communication

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Stay dependency, as they can't go around for education/training and thereby unemployed

Majorly come from low income (~90%) causing them to be a major liability on their families





The Market

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The Market

The **World Health Organization** suggests that 1B+ people in this world need **Assistive Aids** and by 2030 this number would be around 2Bn people. 80% of these persons with disabilities come from developing countries. 92% of these persons come from the lower middle income group and 73% of these persons % are dependent or unemployed.

Here are the numbers of the total market:



53 Mn Visually Impaired (VI)



230 Mn Hearing Impaired (HI)



358 Mn Physically Impaired (LI)



140 Mn Other disabilities





The Products

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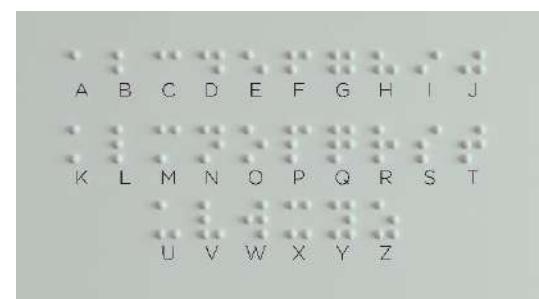
The Products



Saarthi – New Smart Cane – An effective & world's most affordable assistive navigation device for the blind to walk in any kind of setup with comfort & independence. Saarthi offers **99.7% Obstacle Detection Accuracy** in any scenario. Universally designed for every white cane. One charge lasts for 30 days.



Able – eBraille - e-Braille being a revolutionary device to support education & employment accessibility for the blind & visually impaired community by making content accessible for the users. Wirelessly communicate to and from any portable device to provide ease of typing. Creation, editing and publishing any content for academic & professional needs.



The Products



Handicare – Assistive device for lower limb disability – providing hassle-free mobility access to people with lower limb disability thereby reducing effort & drawing comfort in their indoor navigation. Understanding that pain, Torchit invented a device which allows the user to walk with complete ease and comfort without having any push from any body part.

Flexmo – Smart Crutches - Basic axillary crutches for comfortable mobility for people with fractures, limb impairment and any other lower body malfunctioning requiring assistance. Smart crutches enhance the mobility of the users by enhanced stability, grip and less fatigue while walking and designed for all-terrain performance.



VOIS – Smart gloves for the deaf & mute – is an assistive communication device providing the power of AI & ML to interpret conversations through converting other person's words into text through a smart watch and thereby enabling responses through enabled gloves. Smart gloves help the hearing and speech impaired person to communicate with anyone & everyone with complete ease without any sign language.



Torchit - Saarthi new smart cane user Testimonial:

<https://www.youtube.com/watch?v=MqmdvBrOpoM&t=4s>



Torchit - Saarthi new smart cane, An assistive mobility aid for Visually Impaired:

<https://www.youtube.com/watch?v=eVzj88MxP1w>





A central illustration depicts a white rocket ship with a red pointed nose cone and two red fins on its side. It is launching upwards, leaving a bright yellow-orange flame trail behind it. The background is a solid yellow color with several small, white, five-pointed starburst shapes scattered around.

The Key Partners

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The Key Partners



TATA TRUSTS





The Growth Story

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The Growth Story



Source: <https://tracxn.com/d/companies/mytorchit.com>

Torchit has closed FY 20-21 at a revenue of INR 1.2 Cr (USD 160 K). The company had initially planned a revenue of INR 4 Cr (USD 530 K) but were unable to meet their projections on account of Covid and subsequent cancellations of contracts.

Do diversify their revenue channels and reduce dependency on any one channel Torch-it has developed **5 revenue channels** in FY 21-22.

Torch-it presently has 5 revenue channels:

- ➔ End-user Direct Sales
- ➔ Partner NGOs, Corporate CSR Partners, Govt Bodies
- ➔ Online Ecommerce
- ➔ Distributors and Retail Partners
- ➔ Large events, services marketing and philanthropy



The Growth Story

In FY 21-22, despite the continuation of Covid scenario, Torchit has a **confirmed order book of INR 13.5 Cr (USD 1.8 M)**. Torch-it aims to close FY 21-22 by bringing in a revenue of **INR 4.5 Cr (USD 600 K)**. In FY 22- 23, Torchit aims to bring in **INR 10 Cr (USD 1.3 M)** through the sale of its **top 3 variants**.

Here are the sales projection in units for the next 3 years:

No. of units:

- FY 22-23: 100,000
- FY 23-24: 300,000
- FY 24-25: 700,000

Cost per unit (In INR):

- Saarthi: 2000
- Handicare: 3500
- Smart Crutches: 3500

Margins:

Torchit is presently operating at a **gross margin of 45%** and **net margins** range between **10%-12%**. With economies of scale, the company projects that the gross margins would go up to 55% in the coming years.





The Execution Strategy

A white rocket ship is shown launching upwards from a red base. A white curved line follows the path of the rocket, ending in a white arrowhead pointing upwards. The background is a bright yellow with several small, white, starburst-like sparkles.

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The Execution Strategy

Production:

To meet the revenue numbers projected, Torchit would need to undertake a major **expansion** in their production facilities. However, this would entail an **investment** and the need to raise substantial **funding**. To ensure that they can meet their revenue targets, Torchit has used an ingenious strategy – they have **outsourced their manufacturing to a sub-contractor** and established **quality control** process to be completed in-house at Torchit. The manufacturing sub-contraction is presently delivering at a **rejection rate of 7%** but will soon bring it down to 3%.

Marketing and Distribution:

In the coming years Torch-it plans to bring-in and collaborate with more CSR consultants, Channel Partners for more high value projects. They also plan to deepen their partnerships with state governments. The company envisions making the platform a leader of Innovative and Utilitarian Assistive Solutions. Torch-it also plans to invest in a R&D team for the advance and upgraded solutions i.e. Jyoti, smart wearable glasses.

Historically, Torch-it has grown through the network effect, word-of-mouth and referrals and have not invested too much into marketing. The historical and projected marketing spend is expected to be as follows:

- ❖ FY 20-21: 4 lacs
- ❖ FY 21-22: 5 lacs
- ❖ FY 22-23: 15 lacs
- ❖ FY 23-24: 23 lacs
- ❖ FY 22-25: 25 lacs



The Execution Strategy

Global expansion

In the coming years Torchit plans to expand its international presence.

USA

- MIT media lab fellow in enable toys
- John Hopkins support in New R&D
- National Federation for the blind support for expanding in the US
- IUStTF support
- Prof. Kyle Keane mentoring Torchit (MIT assistive tech lab)

Turkey

- TOP 100 startups in the World in Startup Istanbul 2016
- Tested and demonstrated products in Türkan Sabancı Primary School

France

- TOP 7 globally in Hello Tomorrow, Paris 2017
- Tested and demonstrated products in Institut National des Jeunes Aveugles.

Australia

- Research Paper presented in APCAR 2017, Melbourne, Australia
- Tested and demonstrated products in Victorian Blind Cricket Association



The Execution Strategy

Hong Kong

- Selected and Invited in RISE, Hong Kong 2017
- Tested and demonstrated our product in Ebenezer School & Home for the Visually Impaired

Korea

- Selected and supported by Korean Startup, NIPA, Department of Korea Govt.
- Tested our product in 12 different blind institutes across S Korea
- Torchit has an established office in Korea
- Exploring partnership with Korean Blind Institute and DOT incorporation

UK

- Fellow in Leaders in Innovation by Royal Academy of Engineering, UK
- Tested and demonstrated products in Royal National Institute of Blind





The Mentors

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The Mentors

OUR MENTORS

Seasoned advisers who have taken up the mission to empower the visually impaired community



Dr. Bhushan PUNANI

IIM A | Executive Secretary, BPA



Prof. Ranchod SONI

Retire Prof. | Lion Member



Prof. Baskar MEHTA

Retire Prof. | NAB President



Prof. Kyle Keane

Visually Impaired | MIT



Abhinav KAPADIA



CFO, PDPU | Director, IIC



Girish SHAMBANI



Head Strategy, Bosch



Anay MASHRUWALA



Director, Venus Ltd | Mentor



Ashish CHAUHAN



CEO & MD, BSE



Helpful Links: [Hi Honey, Bye Sugar!](#)
[Fitbee Foodies](#)

Useful Links



Additional Links:



1. Shark Tank India, Season 1, Episode 7:

<https://www.mxplayer.in/show/watch-shark-tank-india/season-1/a-never-give-up-spirit-online-f5bc3d5fc7f6874676b5f2980dbfb01e>

2. <https://inc42.com/startups/how-ahmedabads-torchit-aids-the-visually-impaired-with-assistive-tech/>

3. <https://www.themachinemaker.com/startups/saarthi-by-torchit-lightens-visually-impaired>

4. <https://yourstory.com/2019/10/tech30-startup-torchit-saarthi-ai-ml-visually-impaired/amp>



End of case questions

1. Describe the Torch-it business.
2. Can you identify the Business Model?
3. Estimate the TAM – total addressable market.
4. Analyze the other players in the market
5. What are the sales achieved since FY 20 and the projections for the next year?
6. What are your key learnings from the Sales Strategy?
7. How does Torch-it plan to achieve the sales number?
8. What is the customer acquisition strategy pursuant and marketing activity?
9. For Torch-it, calculate the following 3 metrics and comment on the ratios
 - CAC
 - LTV
 - Churn rate
10. What were some of strategies that Torch-it adopted for Operational excellence while targeting scale?

