

Ecosystem Engineering: A Technical Study of Determinants for Sustainable Campus Startups - Boozup & Torchit in Shark Tank India Series-1

Amrutha F

Koneru Lakshmaiah Educational Foundation, KLEF, Vaddeswaram, Guntur- 522302,
Andhra Pradesh, India

Abstract

Objective: To study start-up journey of Booz-Scooter & Torchit and to determine factors for campus startup ecosystem along with linking it to sustainable development

Methodology: Case study Approach was used in this paper, wherein interview was conducted with founder of Booz-Scooter & Torchit. **Major Findings:** In India, many youths do possess skill sets that can be good enough for Start-up but due to lack of support or resources, they drop this idea of the start-up. This paper identifies the determinants of campus start-up ecosystem and mention the story of two start-ups from Shark Tank India Show. This case describes sustainable idea of providing e-scooters to on subscription model and Torchit is working for visually impaired community by providing them affordable navigating tools. **Contribution:** This paper helps in motivating upcoming start-ups and entrepreneur to adopt sustainable approach in their idea. It also links sustainable development in campus start-up ecosystem by using case study approach.

Keywords: Booz Scooters, Campus Start-up, Torchit, Sustainable, Triple bottom line.

Case 1: Boozup

A native of Bhavnagar, Mr.Rutvij founded Boozup to solve his own short distance commute problems without having to buy a vehicle and in his third year of engineering, Rutvij started working on a cost effective way to solve his problem which was also faced by many others. Rutvij along with a team of young engineering graduates and couple of industry experts set the course to dive deep in one of the hottest growing industries across the globe. After countless office hours and plates of pizzas - a mobile app, an electric kick scooter, mobility

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infrastructure a first in industry business model were developed and deployed at various public spots and business premises across the Ahmedabad and Gandhinagar City with a fleet of just 20 Booz Scooters in January 2020. By doing so, Booz becomes the first Civic Body approved operator in South Asia to deploy such electric kick scooters for city public spots. (Dasadia, 2022)

Rutvij moved to Ahmedabad to pursue his engineering in automobile from one of the renowned college which was affiliated to Gujarat Technological University. During his third year of engineering, he realized that there should be some cost effective way to solve problem of short distance commute (inside campus/business/corporate parks). One of the alternative that was available was of bicycle but seeing the environmental conditions along with hectic schedule made this option more tiresome. Second



Figure 1 Rutvij Dasadia

best option was of electric bike. This concept was having huge popularity in foreign countries like USA/Europe but in India we lack proper infrastructure. Sustaining this type of product in Indian environment and on available infrastructure (Charging & Road conditions) was difficult.

STP Analysis

Considering above factors, Rutvij and his team decided to narrow down to only closed premises like big University Campus/Business Park where infrastructure of proper road surface along with charging stations can be deployed. Also he closely observed other peer players available in this industry and decided to have subscription model whereby universities/municipal corporations/business parks would pay subscription fees for this service. This concept is well known as Mobility as a Service (MAAS) whereby Boozup will provide e-kick scooters, application, charging stations and maintenance for the same. Their major focus is on B2B segment, wherein commercial, educational as well as governmental organization will pay monthly subscription fees and user (employees/students/consumers) with help of application can access this MAAS service.

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Pilot Testing: He along with his team developed a prototype, application-software and required infrastructure like charging and pickup/drop centre for booz bikes. Before launching commercially he participated in number of events with his concept to validate its sustainability and get his idea recognized from various industry experts.

(Rutvij, 2022)



Figure 2 Booz e-scooter- www.boozup.net

Pilot Run: He collaborated with Ahmedabad Municipal Corporation AMC in order to provide green mobility services at Sabarmati Riverfront and Kankariya Lakefront for tourist. His major purpose was to get feedback and review so that changes can be accommodated accordingly. After getting feedback/reviews, his major focus was on product redevelopment and updated many aspect of product and service process. Slowly he started implementing his project in different premises and simultaneously focused on raising funds.

Shark-Tank India: During June Shark Tank India started accepting application in which Rutvij applied for investment ₹40 Lakhs for 15% of stake in his company. Selection procedure was rigorous in which he cleared all rounds-3 rounds before getting an opportunity to pitch in front of sharks. He in his pitch justified his business idea and the potential that Booz up has. He got investment of ₹40 Lakhs for 50% stake which was done by Sharks- Vineeta Singh & Ashneer Grover. His pitch was featured in 1st episode of Shark Tank India show which was broadcasted on Sony Television. He also adds that “People of America on being asked what are your career goals, generally say they want to have Great American dream (Want to do business of their choice).” According to him many small business indirectly help in job creation and growth of economy. Slowly in India also this concept of start-ups is growing. Show like Shark Tank provided inspiration to many and now instead of

having daily family drama discussion people are having business idea discussion on dining table.

Components of Campus Start-up Ecosystem

Family Background: His father is civil engineer by profession. His father also holds various retail experience. His mother has completed her education in BSc Chemistry and is housewife. He also has a younger brother who is in designing. Having business family background was an added advantage in his entrepreneur journey. He added that he received huge support and motivation from his family. He also added that support may vary from Family to family. He said that he was lucky enough that his family already was in business and so his father supported him in his idea. According to him, if one's family is not ready than its their responsibility to convince them because if one is not able to convince his/her family than how would they convince other about business idea. He advised that one should not leave without convincing but for that one should have proper idea and planning.

Competition & Events: Many events and competition held during college gave genuine feedback. Suggestion and feedback from industry expert validated his concept/idea. To this he added further that after company formation, they have to go for POC proof of concept. During that time in IIM Calcutta there was start-up-innovation competition in which although having only concept, he received very good feedback for his idea. He was told that it is doable business and can think in given proper direction

Incubation Support: According to him, if you have confidence that your idea is worth doing then you should definitely go for incubation. In Gujarat many incubation centres are there. He added that in incubation centre one will receive required guidance of what to do, how to do and they will mentor you for right way of doing the business by helping you in prepare business plan . To this he also added that he got required support and guidance from Gujarat University Start-up and Entrepreneurship Council GUSEC.

Campus: Entrepreneur cell was newly created at his time so was not that much active but when he passed out from college, at that time that cell was very much active. He also added that it is not necessary that one should enrol in same incubation centre from where they studied. It can be any incubation that they can enrol and get proper resource and guidance from them. According to him, college may have mix environment supportive for job as well

as business. What one want to do depends totally on them. He also adds that college campus will teach you book- theoretical fundamentals but life earning skills you have to explore and learn. Book won't guide you about practical aspects. It is you only who has to learn all this skills that would be essential for your life. Job and business both have their own pros and cons, you have to decide your path. He also mentions that Faculty support is very much crucial for early validation of your idea/concept and he was lucky to have good faculty support which motivated and guided him very well.

Internship/Work Experience: During last three years of his college, he was having internship experience of 3 companies and was also having one professional work experience. But he was firm with his decision that he wants to grow and move in the direction of BoozUp. He applied for job just to get idea of that competition and interview but was very clear where he want to move and so didn't performed well in that and selected his idea of start-up. He was the one of few from his batch who selected start-up rest maximum were for job or family business. This shows that we have more of job culture where students are interested for lucrative salary rather than own venture.

Alumni Role: In his college at that time, alumni role was limited but yes he agrees that expert sessions from alumni definitely helps in creating more and more successful start-ups. He adds that many top/deemed universities have active involvement of alumni.

Requisite for campus start-up: According to him full scale active incubation centre should be there in college. It should be actively working. Many a times many college have this type of cell but are only for name sake or only on documents. For campus start-ups to grow, active incubation centre is must. Many a times many have idea but it is not converted to business because of lack of this resource. He also gave advice to upcoming start-up that "Start early fail early instead of not starting with fear of failure" He suggested that one should learn from failure and try to improve upon.

Triple Bottom Line Concept of Sustainability

(Carter, 2008) state that the triple bottom line is the combination of Social, Environmental, and Financial performance, as shown in below figure. Therefore, for a company to achieve sustainability they cannot pursue financial or social initiatives in an isolation. Instead, it is strongly recommended that companies supply chain should link environmental, social, and

financial goals within a broader strategy to ensure the business pursues sustainability rather than philanthropy.

Societal Performance: Booz up working provides green mobility. E-kick scooters are provided on monthly subscription model, wherein they provides e-kick scooter along with helmet, rider insurance, charging & docking stations and day to day maintenance.

Environmental Performance: Boozup provides MAAS (Mobility as a service) in a sustainable manner. E-kick scooter are environment friendly. Also target group is of employees, students and consumers who have to move around in big premises. So adding value to their commute at the same time it also provides environmentally friendly solution.

Financial Performance: One of the article of Forbes mentions that e-scooters are more than 1,000% more efficient per mile than the average combustion vehicle based on the energy needed to move them. Even if e-scooters' batteries are powered by a grid that relies on fossil fuels, the emissions per mile from the electricity generation is negligible. Also one don't have to invest in costly vehicles for inter premise commute as premise will be paying for this service. Also having shared model of e-kick scooters is financially as well as environmental beneficial.

Case 2: Torchit

Globally, over 2.2 Billion people and in India, we have more than 40 million people including 1.6 million children are blind or visually impaired as per the article of Tribune India (Tribune India, 2019). Louis Braille created Braille tool of writing system in the early 19th century, which help visually impaired and blind people to read, write and communicate (inc42, 2016). But when it comes to ease of movement, the only available option for visually-impaired is to rely on white sticks and canine support (help-dogs) to move around (Dandona L., 2001). Major problem for this community is while moving around in the real world is not a problem in many cases, walking and detecting objects and barriers within rooms and closed spaces can



Figure 3 Triple Bottom Line Concept of Sustainability by Carter



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be a tough task There is huge scope as lack of assistive technology is an obstacle for overall development of the differently-abled community. But Ahmedabad-based tech start-up “Torchit” has a effective solution which will make navigation for the visually-impaired very easy and convinient.

With a vision of providing guiding light to visually impaired community and improve their lifestyle and ease of living, Hunny Bhagchandani, a young and dynamic personality; industrial engineer by qualification set up this social start-up called Torchit in Ahmedabad in 2014.

Idea

Having a Sindhi business background he had always desired to have his own start-up but was not sure in which field. Having visited Blind People Association from a very early age along with his father, he decided to do his internship at blind people association, after first year of engineering. There he realised there is huge scope of innovation for this visually impaired community. At that time he was only having basic idea that he want to do something for this community but was not sure about what and how to proceed. Afterwards during college robotics competition he and his colleagues made few robots which can sense obstacle while moving around and closely observing visually impaired community , he found that for visually impaired person they many a time hits various objects/obstacles that they find in the route as regular stick is not equipped to warn them against upcoming obstacles. This small accidents might be serious at times and even can lead to loss of life. So this triggered the idea of Torchit. (Bhagchandani, 2022)

Product designing: He started by taking a regular torch and replace bulb with ultrasonic sensor and did relevant programming on app. Within few days their prototype was almost ready. He was not sure about MVP minimum viable product but was confident that this product can now be launched in market. Initially he got few orders and lots of blessings and positive feedback for this product but this product was still not ready for market launch as they were using torch body. So he started working on improving design and accuracy of this product. But soon he realised that he should consult some expert for this and so took guidance from his professors who suggested him to consult some CAD designers. Although he was having basic knowledge of CAD but for this product, it requires expert and so he started looking for

*Figure 4**Figure 5*

professional help meanwhile they were lucky enough as at that time, during 2016 Government of Gujarat initiated various campaigns for start-ups and their concept was selected and they were one of the few who got initial opportunity of Funding provided by Government. So they registered their company and hired few interns and professionals to work with them. This is how the foundation of their start-up was laid.

This product was designed in such a way that it can fit almost all 22 different design of white cane used in India as well as it also fits across globe. (Machinemaker, 2016)

Reaching to Consumer

According to the owner Mr.Hunny, word of mouth had been instrumental in spreading the positive reviews and feedback. Torchit's team had worked with over 18K visually-impaired across India, South Korea, Kenya, Tanzania and Ethiopia. He also claimed that year-on-year, the growth has been 60% in terms of users. To reach till customers, Torchit has three primary sales channels — corporate social responsibility (CSR) activities, state-sponsored projects and individual purchases. They have successfully completed CSR projects with companies like ONGC, Wagh Bakri, Oil India, HDFC, GRUH Finance, MLM India etc.

Family Background and Education background

He has completed his Industrial Engineering from PDEU (Pandit Deendayal Energy University) in 2013-17. He did his fellowship from MIT Massachusetts Institute of Technology (U.S) in 2015 and leaders in innovation fellowship from Royal academy of engineering in 2019. He had also done executive leadership program from IIM Indian Institute of Management Ahmedabad in 2018-19.

He belongs to a Sindhi family. His father is having business (distributorship) of electronic items like home theatre, led screens etc. In early education he was mediocre in his studies. He used to visit his father's shop whenever possible to learn and help him. After class 9, his father asked him about future plans and so he was cleared enough that he wanted to do something on his own and so decided to study further. With increased efforts and clear goals, he stood first in class 10th. After this he decided to go for science and again in engineering too he was topper in initial year of engineering in his university. By end of third year of engineering, he has already registered his company "Torchit". He was not able to focus more on his studies as he also has to manage his company simultaneously. So he took guidance from professors and also requested management to allow him to drop from course was not able to cope up and

also university have criteria of minimum attendance and other norms to follow. Being a topper, management suggested him not to drop out in final year as it will risk him his complete career because there is no surety of success in start-up. During same time various movies like Social networking influenced his decision to focus purely on start-up and so it seem logical decision to drop out from college. So management suggested him to complete studies and also supported him by allowing him by easing out few rules like not mandatory assignments and allowing him to study at home at his words of getting good scores in exams. He also added that few of staff was not cooperative enough but having management support and permission he was allowed to carry out his start-up along with his studies as a special case.

Journey of Torchit

Many ups and down were there in his journey. Being founding member of his venture, he has to focus on many things along with his studies. Also being occupied with multiple task he was not able to give sufficient time to his friends and family and so they were also little unhappy. He was taking huge efforts as right from day start till end he alone has to deal with multiple agencies, interns and various dealers-suppliers were tough task as having no established network one have to start everything from scratch.

He learned many thing from his journey and that still continues. He believes that learning never stops. There were many moments during his initial journey where he was confused and even not sure what he was doing was right or not. Many prototypes got failed and rejected but without losing hope, he continued with his passion and efforts. One such incident he highlighted was during April, 2017 when he completed his graduation at that time also product was not completely ready and so he has to go to university everyday even after his completion of course as his working office was setup in the university campus. He got a placement offer of 14 Lacks per annum from one of the biggest MNC in his third year but he opted for his start-up and even at the end of his graduation, product was not getting good response from market which made him little de-motivated but instead of losing hope he kept working hard to achieve his goals. He was lucky to have huge support and trust from his parents. Being unclear with his selected path and to get the genuine feedback from expert, he decided to apply for various start-up events. He had applied for more than 40 events including IIT, IIMs & many abroad events and in more than 90% of events he got top ranking

positions. He launched product on 12 Oct 2017 and started selling products from Jan 2018. Only after a small duration of 8-10 months his team has already created a huge impact on thousands of lives.

Career Decision – Job or Family Business or Torchit? After getting a job offer from MNC, he had to take a crucial life decision regarding his career. He has three options at that time- Either to go for Job or expand his family business or pursue his own venture of Torchit but torchit at that time was still in introductory phase. He consulted his parent, professors and mentors. Mentors suggested him to decide on his own as he only had right knowledge regarding his venture of Torchit, Professors suggested him to go for job considering stability and safety along with his venture and his father advise him to pursue anything but make sure whatever you do , you do with whole heartedly. His father also instructed him not to pursue two things simultaneously as he won't be able to give proper focus on either. His father having huge business experience, he was convinced not to pursue two things simultaneously. He firmly believes in quote of Shark Tank India “Suno Sabki, karo Apni” (Listen to all but do what you think is best for you). So he rejected job and went ahead with his venture Torchit.

Role of ecosystem

He believes that many campus do have culture of job including his own college but majorly depends on student's mind-set. In one of the course he was enrolled in IIM and nature of course was such that all entrepreneurs were there so business environment was also prevalent. As his start-up was initiated during college time he was occupied with that because of which he was not much in contact with fellow students but he do agrees that mentor support and guidance is essential for start-up to flourish.

He also adds that in campus, incubator facility should be actively involved in supporting start-ups to grow and sustain. He was also part of incubator centre at his campus and to this he also added that after winning multiple events, at one point of time he was having support from more than 11 incubators across Asia.

He was in favour that many college have practical project/internship during last semester or year which is actually needed so that students get real insight of business operations. He also added that if this was allow earlier, I might have done internship at my own company so that before completing my course, I will be market ready. College education is good but focus should not be only theoretical but right education along with practical skills like

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communication, writing, presentation, handling business-legal, distribution, marketing etc. matters most. Only engineering or technical knowledge is not sufficient but one also need other expertise to manage business efficiently. According to him, role of friends and family is crucial in journey of start-up. He firmly believes that one should have friends who are motivating, they are your real friends. In his journey, family always supported him but man a times society around you may de-motivate you. In his case when he started creating torch for visually impaired, people use to laugh but his family and close friends were confident. Also by applying and winning in various competitions he was confident about his idea and so he never felt de motivated. His continuous hard work and hope kept his idea growing and till now his team has impacted more than 100000 lives.

Torchit and SDG (Sustainable Development Goals)

They have taken up the efforts to empower the visually impaired but Differently Abled community for achieving a better and sustainable. All of their products are targeted at the grassroots level by being simple, effective & yet affordable thereby helping out the masses at the bottom of the pyramid. They are align with 5 SDGs:

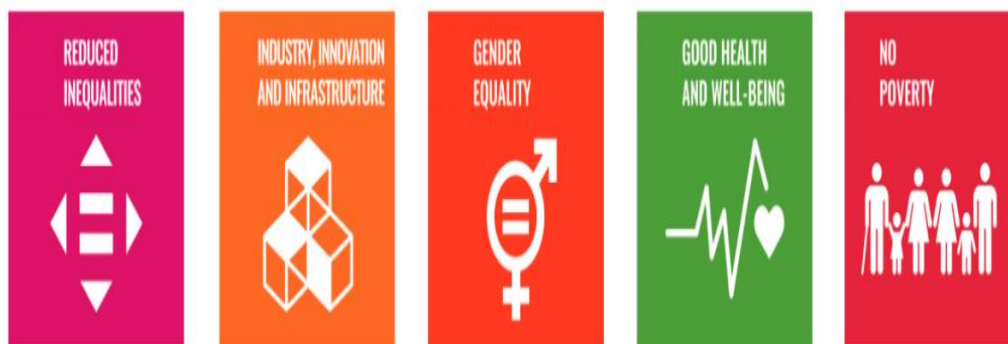


Figure 6

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