Impact of Entrepreneurship Ecosystem in an Engineering College: A Case Study

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*Abstract-***Undergraduate engineering education should be effective in preparing students for multidisciplinary system integration and optimization to become innovative and gain a competitive advantage in this global economy. Moreover, it is essential to embed the aspect of community engagement-imparting mutual learning and respect and encouraging involvement in engagement activities. This paper highlights the case study of an Entrepreneurship Cell in an engineering college: its aim, purpose, and objectives and how the authors' college's E-Cell in particular has conducted different forms of events to satisfy them and make technologically equipped students well-versed in other aspects like finance, marketing, creativity and communication skills. It also reflects on the importance of community engagement, networking, and connection building for the exchange of ideas and strengthening the basis of the E-Cell. Hence, the establishment of an E-Cell in an engineering college educates the students all about starting and running their venture and involves them directly working in their start-up as a community through the medium of Campus Companies.**

Keywords— **B-Plan; Campus Company; Entrepreneurship; E-Cell; E-Summit; Student Startup.**

JEET Category— **Research**

I.   INTRODUCTION

Entrepreneurship is a multi-dimensional concept. It exposes students to a plethora of life skills such as perseverance, effective communication, creativity, planning, leadership, and tenacity which help in their growth and development as an individual apart from mastering their field of study. In a University, The Entrepreneurship Cell, commonly referred to as the E-Cell, creates awareness about entrepreneurship among students by organizing a blend of multiple events every academic year ensuring a positive learning experience for all students.

An E-Cell is an intended platform to educate students about entrepreneurship and encourage them to express their business ideas and build global businesses that include

technology, vision, and business acumen. The main aim is to redouble the efforts in disseminating knowledge and instilling enthusiasm among students by changing their business vision so that they will appreciate and always remember it.

In an Engineering Institute, the students possess the talent to augment the technological advancement of the country. Coupled with being an entrepreneur, it makes them the job creators of tomorrow, filling the pipeline with potential businesses and careers and creating a culture that values and promotes self-employment. This in turn leads to both technological as well as economic advancement in that country.

In a Student's life, an E-Cell is important as it acts as a bridge between future business prospects and promotes self-employment opportunities among students supported by innovation. An E-Cell plays a crucial role in a university as it promotes a culture that celebrates uniqueness and ideation. This culture is amplified by the events conducted by the E-Cell, these include Speaker Sessions, Hackathons, B-Plan competitions, motivational sessions, hands-on workshops, design thinking competitions, fun learning events, panel sessions, and much more.

Each of these events aims at the all-around development of a student and instills a new quality of entrepreneurship among them. Entrepreneurship is a multi-valued aspect. Each of these events explores them and brings it out to the participating students. For instance, a speaker session is an event where a prolific guest speaker from the industry gives the students a glimpse into the journey of an entrepreneur and helps them understand the prospects the same. A B-Plan competition, on the other hand, provides exposure and primary implementation and helps the student in knowing the crux of knowing how to make a Business Plan and Model for their startup idea and present it in the most cogent and conclusive way to potential investors.

A social entrepreneurship event creates awareness among everyone about the Idea of social entrepreneurship and how it facilitates solving social problems or effecting social change via entrepreneurship. A design thinking competition

helps them to observe and identify a way in which an existing product can be made more convenient and accessible, thus assisting them to improve their creativity and promote thinking *avant-garde*.

This paper highlights how the activities conducted by an E-Cell fostered the development of students by hosting an abundance of quality events and gave them an experimental learning platform that drove innovation in an entrepreneurial spirit.

II. BACKGROUND STUDY

An Entrepreneurship Cell has mainly two roles- ensuring community engagement and inculcating and propagating multidisciplinary education among engineering university students. But their role is not just limited to their premises, they need to expand to newer boundaries for better prospects, and more innovative ideas, and establish a more diverse environment for their college students so that they can have increased opportunities and a wider and more knowledgeable approach towards entrepreneurship. That is where networking comes into the picture. The college's E-Cell has always been an independent organization, but when an opportunity to build connections presents itself, it is essential to ensure that all the collaborating bodies have a common goal and be a positive influence and a guiding light for achieving the same for all.

Keeping this in mind, the authors college's E-Cell, first collaborated with an on-campus organization for promoting social entrepreneurship for various events. This helped both to achieve recognition and reputation for the authors college and the entire campus, a cluster of colleges offering various professional courses apart from engineering.

Later, we joined hands with multiple E-Cells from the authors college's campus including those offering Post Graduate programs to learn more about the varied approach that each of them takes in making every division of their organization function for a successful event. It was instrumental in helping us experiment and analyze new ideas, learning and implementing them in the E-Cells future events. It also gave us a chance to establish cordial relations within the campus.

The next step was to expand the E-Cell's horizons and make it a well-identified organization. The E-Cell members started participating in Campus Ambassadors programs- an initiative by certain colleges where they recruit students from other colleges to act as a link between their E-Cells to convey and publicize their events more uniformly and efficiently. This played an important role in helping the author's E-Cell to associate with a large number of universities' E-Cells and gain valuable insights about raising the E-Cell's profile and conducting quality events with a spark of innovation and authenticity.

In the academic year of 2020-21,we moved on to organize the E-Cell's very own E-Summit, an exuberant amalgamation of seven grand events promoting Entrepreneurship and its numerous forms; we had the first Campus Ambassador Program where we managed to onboard 50+ student volunteers from universities all over India. This reflected spectacularly on our social media handles, where we gained traction by a whopping 1000+ followers. This is also reflected in the event participation, which was over 700+ for the entire E-Summit. In 2022, we followed it up with the second E-Summit which was a great success.

This demonstrates the importance of networking and connection-building with other E-Cells. The E-Cell has connected with 120+ like-minded student organizations in the country, which will be beneficial for promoting future events and ensuring participation in large numbers and, in turn, helping satisfy the aims and objectives of an E-Cell.

III. EXECUTIVE SUMMARY

The need and importance of multidisciplinary Engineering for the all-around development of engineering students was recognized by the faculty and a group of students in the latter half of 2011. Thus, the E-Cell of the college was established with the support of mentors and superiors in early 2012.

But the mentors and students soon realized that educating the students about entrepreneurship was not enough. It needed the support of an experimental platform where students can exercise entrepreneurship by getting their preliminary ideas converted into established startups within the university with the guidance of mentors and minimizing the risk involved, so that students can learn, grow and get more confident when venturing into the real world. This platform aimed to help students get hands-on experience with various aspects of entrepreneurship by knowing how to make their very own start-up work. This is how the idea of a Campus Company- an opportunity for students to start their own company at a campus level was established.

As word spread and introduction to the digital world influenced fellow students, the number of students exploring the world of Campus Companies peaked in 2014, when the E-Cell had around five Campus Companies on board. This demonstrates the peaking interest and spirit in students to start something of their own and bring splendid solutions to various on-campus problems. The E-Cell has since then witnessed an increase in the number of student entrepreneurs. This number further skyrocketed to a whopping eleven Campus Companies in 2021, the year we conducted the first-ever E-Summit.

Over the years, the number and variety of events conducted by the E-Cell scaled up. Many brainstorming

sessions were conducted, not only for college students but even exclusively for E-Cell members which led to some great ideas for events to be conducted. In 2018, a techno-business competition was introduced which was an amalgamation of idea generation, B-Plan formation, and prototype execution covering every aspect of Entrepreneurship. This event drew a lot of traction and consequently the E-Cell witnessed an increase in the number of participants, not only on the campus but from an innumerable diversity of colleges all over the country. This success led to this techno-business competition as the 'Flagship Event' for the E-Cell- a pompous event conducted every year without fail.

As the positive impact increased, the E-Cell decided to have its first-ever E-Summit in the year 2021. The unprecedented pandemic caused the E-Cell to conduct it virtually through online platforms like Google Meet, Zoom Meetings, and Microsoft Teams.

After rigorous brainstorming and preparation for months, the E-Cell unraveled the grand E-Summit 21 - an amazing two-day Entrepreneurship journey with a lineup of seven unique and exciting events ranging from competitions and games to enlightening seminars and speaker sessions, it was nothing short of enriching and fun-learning. This initiative beheld in awe at the participation of an astounding 700+ participants from not only the country but all over the world.

This success was supported and recognized by the author's college where Entrepreneurship was included as a part of the engineering curriculum.

The idea which stemmed in 2011 led to the creation of an entrepreneurship ecosystem for students to learn and participate, exercising multidisciplinary engineering at its best. Through these years, the vision to create awareness about entrepreneurship: its aspects, challenges, and rewards have been passed on like a baton to the E-Cell's team every year, who have carried forward the legacy, undiminished.

IV.   STRUCTURE OF COUNCIL

The council of the E-Cell is responsible for planning and executing all the events throughout the year to fulfill the objectives of the E-Cell. The entire council is divided into wings for smooth and methodical functioning. The students are elected after a formal interview with the former Senior Council members and the Faculty Coordinators. The structure of the council is as follows in Fig. 1

Due to the increasing presence and popularity of the E-Cell among students, each year the number of applications increased and so did the number of active E-Cell members. The E-Cell's collaboration with the social wing is also a reason for the increase in the number of members of the council. These students spearheaded the

initiatives such as the Campus Company, brainstorming new event ideas, recognizing at the student level where assistance is required, identifying students with ideas and motivating them to start their ventures.
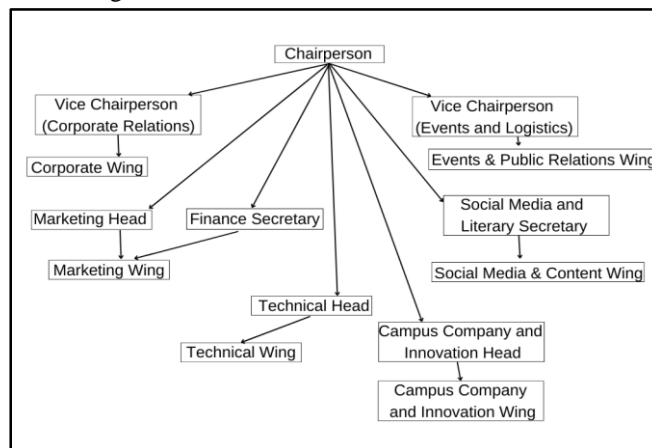

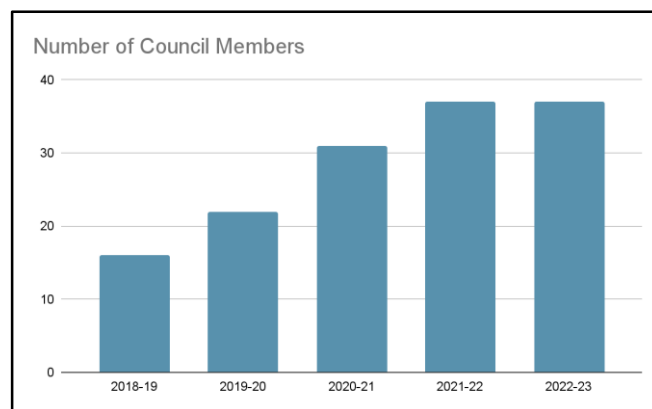Fig. 1. Structure of the council of the E-Cell

Fig 2. Number of council members in the E-Cell

V.   OUTCOMES

The following section highlights the important outcomes of the activities conducted by the author's E-Cell.

A. Campus Company

As we can see in the above trend, from the year 2015-2017 we had a few campus companies registered, but this number dropped in the year 2018-2019, while a drastic increase can be seen during 2020-2021.

In the year 2020-2022 during the lockdown, we saw an increase in the number of students who wish to convert their idea into reality, this is where the author's E-Cell came into the picture. We helped these young and ambitious students to try out their ideas at an experimental campus level. At this stage, we acted as a stepping stone for the students as more and more students were getting inclined toward entrepreneurship.

The support of the E-Cell was very viable as students wanted to explore the start-up world and get hands-on experience in running their venture. These campus companies also impacted college students a lot as the other students were inspired by their success and wished to try out something as well, by going the extra mile with the help of the E-Cell. It helped the students shape their mindset and

become student entrepreneurs and balance their academics along with starting their own Campus Company. The students are very easily able to resonate and relate to student entrepreneurs of the same age group and, moreover, with a similar background as them.
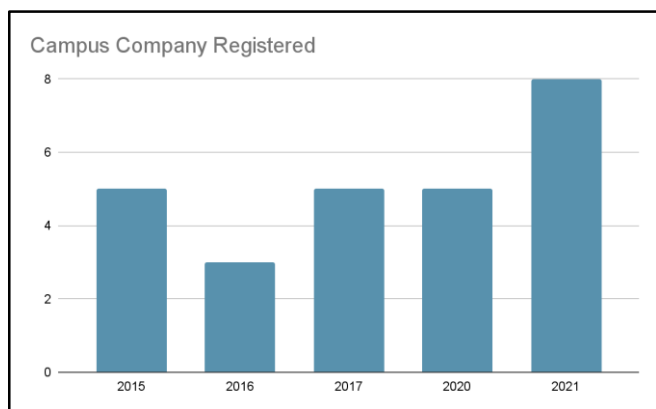

Fig 3. Number of campus companies registered from 2015-2021 in the E-Cell

Due to having an excellent student network on the campus, the idea of starting one's own Campus Company became extremely popular and intrigued students of all years to do something similar. For Example, in a scenario where a particular student had started a Campus Company in a class, it inspired and challenged his peers into the world of entrepreneurship and took an initiative and did something worthwhile about their ideas.

Thus, the unique initiative of the author's E-Cell in the form of Campus Company accelerated the entrepreneurship ecosystem among the campus students by sowing the seeds of entrepreneurship among the students.

B. Event Turnover

Over the years we have grown as a student-run entrepreneurship council, inculcating a sense of entrepreneurship among young minds, inspiring them to become the future leaders of tomorrow and be an asset to the nation and the society. As an E-Cell, we collaboratively managed to get the participation of 1000+ from all over India and overseas as well in the E-Summit 2022 than the 700 mark in E-Summit 2021. Year after year we have increased the number of Campus Companies under us. The E-Cell's reach on social media platforms has increased drastically from 10,000-12,000 impressions to 20,000 impressions. The social media posts on average reach 700-800 accounts while on the website we got an impression of 12,000+ in the year 21-22.

These numbers show that we have managed to reach a wide variety of students and inspire them towards entrepreneurship. This proves that our platform is accessible to the students and it acts as a pilot in their journey towards entrepreneurship, inspiring them to be the employment generators of tomorrow. The increasing trend in participation shows that it has helped the students to have a sneak peek into the world of entrepreneurship and more students than ever are interested to know more about it.
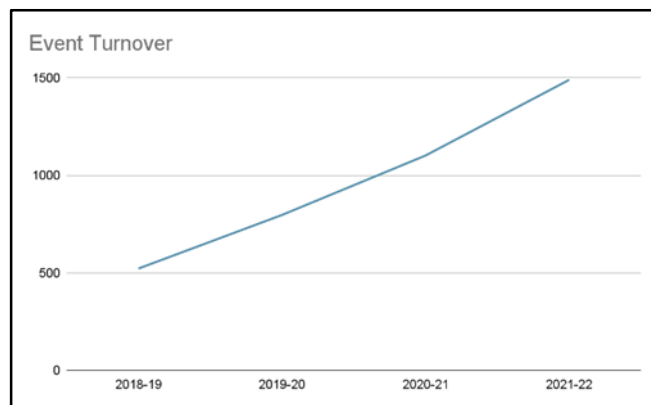

Fig 4. Event participation from 2018-2022

C. Events conducted throughout the years

The number of events conducted has increased significantly with a maximum of 13 events throughout the year 2021-22. This shows that our E-Cell's efforts to amplify its reach in the form of events conducted have created a positive impact among students.

Based on the main focus areas, we have conducted events over the years. These events have been curated to inculcate a sense of entrepreneurship among the students and help them dive deep into the world of a start-up. These events cover a variety of topics ranging right from competitions, speaker panel sessions, hands-on workshops, etc. The quality of events that are conducted over the years has increased. They have been catered to give students an idea of what entrepreneurship is and give them a platform to showcase their visions and ideas.
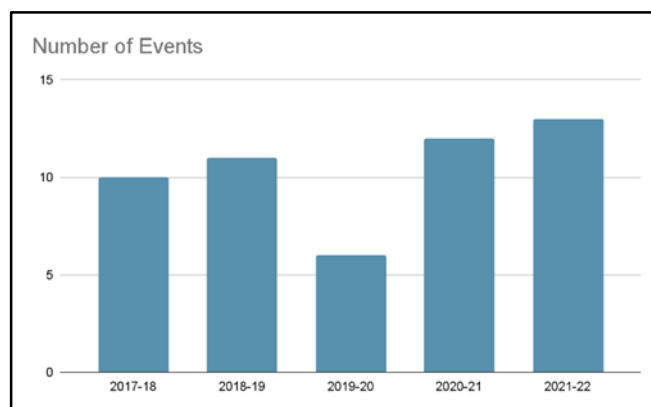

Fig 5. Number of Events conducted by the E-Cell.

An E-Cell conducts various events throughout the year to hone talent and tap into the unexplored qualities of students. These events bring together aspiring students and help them scale up their caliber and understanding of entrepreneurship and its numerous aspects. This leads to an all-around development of an individual through community engagement. This table highlights the positive outcomes of the events conducted by the author's E-Cell.

TABLE I
OUTCOMES

Sr No.	Activity	Outcome
1	Competitions	Competitions encourage students to observe, ideate, and innovate as an entrepreneur. They take away an indelible amount of knowledge about viable idea generation, business aspects, and experience which helps them in their entrepreneurial expedition.
2	Speaker/Panel Sessions	Speaker and Panel Sessions help the students to gain knowledge and exposure about the various aspects of entrepreneurship firsthand from experts and dignified personnel in the field and further inspire them to tread on this stimulating journey.
3	Hands-on Workshops	The student learns a lot about the process of generating potential venture ideas by identifying the problems at them and coming up with viable solutions to solve them. The workshops mentor budding entrepreneurs who need help to channel their ideas.
4	Fun Learning	A lively event that highlights the importance of Entrepreneurship qualities like Teamwork, Time Management, Coordination, Perseverance, and Decision Making. Participants also try to find solutions to handcrafted problems; this helps them test their business and entrepreneurship skills.
5	Social Entrepreneurship	Social entrepreneurship helps students realize the importance of innovation to bring about social change. It also spreads the spirit of free enterprise and provides a sustainable means of livelihood to others. It ignites the idea of creating a social cause among students.
6	Campus Company	Campus Company aims to give students the essence of entrepreneurship earlier in their life by allowing them to form their own companies, hire interns & manage everything with our guidance. It helps the students to polish their skills such as technical, management, financial, and networking skills. This leads to an all-around development

VI. CONCLUSION

An E-Cell plays a pivotal role in engaging students towards innovation. It drives them towards learning new skills through community engagement and multidisciplinary engineering. In this paper, we highlight the efforts of our E-Cell in disseminating knowledge and instilling enthusiasm among students by changing their business vision in a way that they will appreciate and will always remain etched in their memory.

An idea seeded by a group of students and a mentor a decade back is now successful in creating an Entrepreneurship ecosystem on the author's campus. This was possible due to the blend of events organized and the hands-on learning experience provided for the students. As the impact of the author's E-Cell increased throughout the years, the scale of the events increased too, which led to a change in the lives of innumerable students. These students were able to acquire life skills leading to their all-around development.

We conclude that an E-Cell is an unparalleled way of giving students a touch of entrepreneurship apart from their major by engaging them in a variety of events. These numbers have successfully demonstrated how the author's E-Cell in particular was successful in engaging students in innovation through its Campus Companies and its assorted events.

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