

Alumni as Growth Engines: Transforming Education Through Graduate Networks

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Abstract—In India's rapidly evolving educational landscape, Alumni networks present a transformative yet underutilized and untapped resource for the academic growth of the institute and its societal impact. This paper explores the strategic engagement of alumni to address the challenges in Indian Higher education, like employability gaps, skill gaps, research funding, and commercialization, and sustainable funding models for innovation and entrepreneurship. In addition, the paper also presents an analysis of premier institutes like IITs and NITs and private universities and demonstrates that active alumni engagement contributes to 25-30% higher employability, 40% industry-academic collaboration, and significant improvements in Institute rankings. The paper proposes a 3C framework:

1. Connect – Build lifelong relationships through digital platforms.
2. Contribute – Enable structured pathways for giving back to the alma mater through expertise, time, and resources.
3. Co-create –Collaborative initiatives to nurture research, innovation, entrepreneurship, and curriculum design.

The paper highlights the success stories of IIT Alumni-funded research centers, the Global Mentorship Program of BITS Pilani, and Ashok University's alumni-driven internship ecosystem. The paper also presents the challenges specific to the Indian context relating to data privacy and uneven participation across disciplines. Furthermore, the results of the paper highlight the need for

- a) Incentivization (Alumni recognition programs, roles)
- b) Networking platforms – (Mentorship pods and Digital hubs)
- c) Data-driven management (CRM systems and Predictive analysis)
- d) Integration with NEP 2020 (Alumni role in skill building and Open & Distance Learning programs)
- e) Action-oriented Partnerships (startup incubators, CSR Funded Chairs.)

The paper concludes with policy recommendations for NAAC, AICTE, and UGC to give more weightage to alumni-related metrics in the accreditation framework. The paper also recommends that organizations give weightage to the employees for the CSR activity by linking with their alma mater in their annual performance evaluations.

Keywords—Alumni Driven Internship, Alumni Recognition programs, Alumni funded Research systems, NEP 2020.

ICTIEE Track—Faculty Development and Educational Leadership

ICTIEE Sub-Track—Role of Alumni in Enhancing the Education Eco-system.

I. INTRODUCTION

EDUCATIONAL Transformations across disciplines and institutional contexts emerge not through isolated interventions, but through the dynamic interplay of economic, socio-cultural, and pedagogical forces. Alumni and Alumni networks act as powerful catalysts for systemic change in the evolving educational landscape, in contrast to their long-relegated ceremonial roles. Alumni networks are emerging as transformative growth engines with the potential to bridge gaps or promote Industry-research and academia interaction.

Alumni relations with the alma mater have become a strategic asset for influencing institutional growth, industry alignment, and research innovation. (Cheng & Chan, 2015; Singh & Sharma, 2021). The modern paradigm of alumni engagement works as a powerful lever for sustainable growth and innovation to address the institutional challenges in employability and research commercialization.

Contemporary educational systems globally, as well as in India, face a paradigm shift, transitioning from insular institutional models to interconnected ecosystems where alumni networks drive transformative change. The Indian Higher Education sector stands at a critical juncture where the National Education Policy (NEP 2020) charts an ambitious roadmap for a world-class innovation ecosystem and skill development (Ministry of Education, 2020); Institutions face a persistent paradox despite viable solutions; systemic challenges mirror the digital divide due to structural inertia (McCluskey, 1994). The disconnect is reflected in the underutilization of alumni networks, a ready-made resource pool that is absent from institutional strategies.

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Leading universities worldwide are leveraging alumni networks to boost institutional performance. Indian Premier institutes like IITs and BITS Pilani achieve a 27-33% higher graduate placement rate through alumni networks (AICTE, 2023) and 42-45% industry collaboration (IIT Federation, 2023), and 35% of Tech start-up funding was provided by alumni (NASSCOM, 23). Globally, Stanford University and Harvard University demonstrate greater impact, with alumni funding 38% of research projects, 62% of student internships, and \$1.2 billion in funding (Stanford University, 2023; Harvard Career Services, 2023)

The comparative data provides testimony to the potential and progress made by the alumni networks. The top universities across the globe position the alumni as strategic partners in the institutional growth. The comparative benchmarks state the fact that Harvard alumni maintain 14 industry connections per graduate vs 4 by IIT, while MIT alumni create 900+ startups annually vs IIT 300+ (MIT, 2023; NASSCOM, 2023). In this scenario, one can understand that India's 18-25% annual growth rate reflects the significant potential of Alumni networks to achieve global standards through strategic alumni engagement frameworks.

Building on the global best practices and emerging Indian models, this research paper proposes a 3C framework: Connect, Contribute, and Co-Create to reposition alumni as long-term partners in education transformation. Evidence from the flagship initiatives like the IITs' Alumni-funded research centres, BITS Pilani global Mentorship program, and Ashoka University's alumni-driven internship models have yielded enhanced results, innovation capabilities, career outcomes, and improved Industry alignment. (BITS Alumni Relations Office, 2022; Ashoka University Impact Report, 2023)

Despite the stories of success of premier institutes, many challenges persist, especially with the autonomous/affiliated colleges/ universities related to weak CRM systems, limited incentivization, and data Privacy concerns. The paper addresses these challenges and provides an action plan from digital networking platforms linked with LinkedIn, alumni recognition programs, predictive data analytics, and integration with NEP goals. In addition, the paper also seeks stronger policy anchoring through accreditation frameworks, NAAC, AICTE and UGC. Furthermore, the paper recommends that corporations and industries link their CSR efforts and employee evaluations with alumni-led development initiatives. (Varghese, 2020; AICTE, 2024)

This paper explores the strategies for reframing the alumni not as passive well-wishers but as co-architects of the future of Indian education. The subsequent sections are structured as follows. Section II presents a review of the literature on alumni engagement and institutional

development. Section III describes the research design and Scope. Section IV outlines the methodology adopted; Section V provides the results and data analysis, and Section VI discusses implications and challenges, and Section VII concludes with key policy recommendations and future directions.

II. LITERATURE SURVEY

Alumni networks worldwide have emerged as crucial drivers of institutional growth in higher education systems, serving as a vital interface between academia and industry. Internationally, the top universities demonstrated that increasing the multifaceted value of alumni in building institutional growth resulted in substantial financial contributions, mentorship, curriculum development, and research partnerships (Taylor & Martin, 2017).

The American higher education system provides powerful evidence of how well-connected alumni networks drive institutional excellence. At world-leading universities- Harvard, Stanford, and MIT- alumni relations have become strong pillars for institutional development. These premier universities systematically integrated alumni engagement into the financial planning, education ecosystems, and governance models, creating cycles of mutual benefit between the alma mater and graduates.

MIT alumni-founded startups generated an annual revenue of \$1.9 trillion and employ more than 4.6 million people worldwide. In addition, the MIT Sandbox Innovation Fund, an alumni-backed initiative, provides seed funding and mentorship to student startups. (MIT innovation initiative, 2021). Stanford University also leverages alumni funding, and its endowment fund reached \$37.8 billion. and Stanford's office of development reports that 70% of all donations come from alumni. Stanford alumni founded over 39,000 companies, contributing \$2.7 trillion to the global economy. (Stanford GSB, 2021). Harvard University's endowment fund of \$53.2 billion in FY 2024, making it the largest academic endowment globally, and out of which 40% is driven by alumni donations, which are channeled into scholarships, research, innovation, and infrastructure through a systematic approach. Furthermore, the alumni associations of Harvard run over 220 global clubs and shared interest groups offering mentorship and support across the world. (Harvard University, 2022)

In the Indian context, IIT Madras has raised around ₹ 513.38 crores (approximately \$61.5 million) for the FY 2023-24, marking a 135% increase over the prior year. 960 alumni donors contributed ₹ 368.19 crore (approx. \$44.1 million), and these funds were spent on student scholarships, sports infrastructure, and research initiatives in frontier domains like artificial intelligence, diabetes care, and renewable energy (The Hindu, 2024). IIT Bombay Alumni Association has contributed over ₹300 crores (\$36 million) to the alma mater through initiatives like Wadhvani Research Centre for Bioengineering and startup incubation programs (IIT Bombay, 2023). Among autonomous and affiliated colleges, the premier institutes like BITS Pilani

Alumni network support the BITS Spark incubator towards student startups and faculty-led research by providing a fund of ₹40 crore (\$4.8 million). In addition, alumni donated ₹8.4 crore to create Kakatiya Rural Innovation, Technology and Implementation Centre (KRITI centre) for fostering rural development through technology-driven social impact projects.

Private Universities like Ashoka University have leveraged their alumni network to co-develop the placement and internship ecosystem through their structured mentorship program. (Ashoka Annual report, 2024). However, the broader sector, especially autonomous and affiliated colleges in India, presents a mixed scenario of emerging potential as well as challenges. According to AICTE 2022, nearly 38% of autonomous colleges have active alumni associations catering to career guidance, scholarship initiatives, and project and placement mentoring. On the other hand, 11% of colleges affiliated with public universities do have a structured alumni engagement mechanism but fail to reach the expected outcome owing to administrative constraints and limited digital infrastructure. (AICTE, 2022)

While international scholarship demonstrates the robust alumni ecosystems and their role as catalysts towards institutional development, fundraising, and mentorship (Weerts& Ronca, 2007; McDeermon, 2013), Indian research on this critical Alumni resource remains underdeveloped. Existing studies predominantly focus on IITs and IIMs (Aithal et. Al., 2015), neglecting the majority of India's higher education system, especially autonomous and affiliated colleges, which enroll over 78% of Indian undergraduates (AISHE, 2022). The research gap is compounded by a lack of empirical studies related to institute enablers, leadership commitment, digital infrastructure, and policy frameworks, which could facilitate scalable alumni engagement.

The absence of systematic research on grassroots-level alumni mobilization overlooks opportunities to align with India's NEP 2020 goals of holistic education and industry-academia interaction. This study seeks to explore these disparities and offer evidence-based frameworks tailored to India's diverse higher education landscape and bridge the theoretical potential and pragmatic implementation.

III. RESEARCH DESIGN

This section presents the research design employed for this study.

A. 3 C Framework:

The 3 C Framework is a model designed to harness the potential of alumni for transforming the scenario of the Higher Education system in India. The Connect part of the framework builds or forges connections among the alumni and the institutions through the available digital platforms, social networks, and Alumni meets. Contribution is the second step after establishing the connection, and this step channels the alumni resources via mentoring, grants, and scholarships. The third step is to co-create where the alma mater fosters collaboration, innovation through the curriculum input, startup incubation, and joint research works. Grounded in Social capital and stakeholder theories, this 3 C framework provides a scalable pathway not

only for enhancing institutional funding but also for improving research collaboration, knowledge systems and systemic relevance through alumni networks.

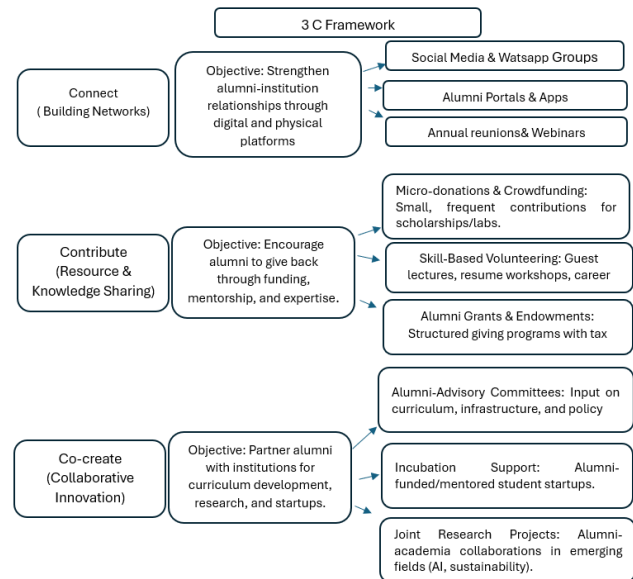


Fig. 1. 3 C Framework

B. This study employs a qualitative and exploratory research design to investigate the potential of the proposed 3 C Framework – Connect, Contribute, and Co-Create as a catalyst for ushering alumni-driven transformation in Indian higher education.

Research Question:

How can the 3C Framework (Connect–Contribute–Co-create) enhance alumni engagement to drive educational transformation in Indian higher education institutions?

C. Sampling:

The study adopted a purposive /random sampling to identify participants with substantial experience and engagement in alumni networks, ensuring an in-depth understanding of the role of the 3 C framework. Self-selection was used in the process of the interviews. A public call for participation was sent through alumni portals and WhatsApp groups to 8 engineering colleges. All respondents confirmed their willingness and 49 participants were interviewed.

TABLE I
LIST OF STAKEHOLDERS CONSIDERED FOR INTERVIEWS

S.No	Category	Count	Years of association with alma mater
1	Alumni Relations Officer	4	10 yrs
2	Alumni Dept. coordinators	10	10 yrs
3	Principal, Directors & Deans	5	30 yrs
4	Alumni	30	25
5	Alumni platform - Manager	2	4 yrs

In addition to the individual interview, focus group discussions were conducted with the executive councils comprising 8 – 10 participants to capture their experiences, suggestions, and barriers.

The diversity of the sample provided a multi-perspective insight into the current engagement patterns, challenges, and strategies for implementing the 3 C framework.

IV. METHOD

This section focuses on the methods employed and presents the objectives and question design for the structured interviews conducted with the institutional leaders, alumni platform managers, alumni, and alumni deans and alumni department coordinators of Engineering colleges. The objectives are formulated in alignment with the 3 C Framework (Connect-contribute& Co-create.)

A. Objectives

1. To understand current patterns and channels of alumni engagement (Connect)
2. To explore alumni's willingness and capacity to provide resources, expertise, or mentorship (Contribute)
3. To examine interest and feasibility of collaborative initiatives between alumni and institutions (Co-create)

The objectives have provided the necessary input to create the interview questions:

B. Question Design

Interviews were conducted as a part of the data collection process, and 6 core questions were designed to capture the diverse stakeholder perspectives on alumni engagement, collaborative and contribution mechanisms. In addition to this, the questions also probed the barriers like lack of communication channels, lack of motivation to give back and institutional follow-up. Permission was sought from the participant to use the data for research purposes.

Questions for the interview are listed below

1. How would you describe the current state of alumni engagement with your institution? What works well, and where do you see gaps?
2. What are the available platforms for interaction with Alma mater?
3. What are the ways alumni contribute to the institution? (funding, scholarship, knowledge sharing, Career guidance). What motivates or hinders these efforts?
4. Do you think alumni and the institution co-create initiatives like research projects, joint innovation, industry collaboration (for example: Curriculum design, alumni teaching a unit, research, entrepreneurship)?
5. What challenges – cultural/ structural or logistical prevent deeper alumni involvement? How to address these challenges?
6. According to you, what steps/ strategies could Institutions take to strengthen alumni collaboration?

Focused Group Discussion Question

In what ways can alumni and the institution work together to co-create programs, initiatives, or resources that mutually benefit current students and alumni, and how would you personally like to contribute to such efforts?

V. RESULTS & DATA ANALYSIS

The analysis of the 49 structured interviews and focused group discussions yielded recurring patterns, opportunities, and challenges in alumni engagement across the sampled engineering institutions.

1. Connect: Alumni Engagement Patterns

A. Digital engagement:

The participants mentioned that their institutions have an exclusive portal for alumni engagement. But 78% of institutions relied on informal social media groups like LinkedIn, Facebook, and WhatsApp groups for alumni outreach. Only 22% of institutes have structured CRM (Customer Relationship Management Systems) to track alumni interactions.

B. Gap Analysis: Interviews revealed that 65% of alumni mentioned that communication was sporadic and event-driven, like annual reunions. This reflects that there is no sustained engagement strategy. 40% of graduates were not aware of institutional alumni programs, highlighting the visibility crisis.

C. Institutional differences: The focus group discussion with alumni revealed that Elite institutes like IITs and NITs maintained a structured alumni database with more than 50,000+ alumni, whereas affiliated colleges relied heavily on a word-of-mouth network, leading 15% engagement rates.

2. Contribute: Alumni willingness to give back

A. Mentorship & Career Support:

58% expressed interest in mentoring students but only 12% received an invitation from the alma mater, depending on the requirements of the disciplines.

B. Financial Contributions: 15% of alumni donated funds towards scholarships, laptops, owing to sentimental value as well as 80G tax exemptions. 55% of Alumni cited the lack of transparency in fund utilization as a deterrent.

C. Knowledge Sharing: Alumni in senior industry roles are willing to deliver guest lectures (42%), but Institutions lack an alumni faculty program, whereas a few colleges have stated Alumni Professor of Practice from 2023.

3. Co-Create: Collaborative initiatives

A. Curriculum & Pedagogy: 33% of the institutions have Alumni as Board of Studies members in updating syllabi, resulting in 20% higher industry relevance. (Courses related to AI/ ML are co-designed with industry partners.)

B. Research & Innovation:

While IITs, NITs and BITS Pilani have successfully leveraged alumni networks to fund research and innovation generating 15+ patents

and BITS incubator supporting 40+ startups, the affiliated colleges are not able to replicate this model.

Alumni expressed that structural barriers like limited funding like Rs 5-10 lakh vs IITs Rs 5 - 100 Crore alumni funding. In addition, bureaucratic hurdles in collaboration approvals and weaker alumni networks cripple their R&D potential. 8% of affiliated colleges have formal alumni research partnerships compared to 92% of elite institutions

- C. Entrepreneurship: A Few Affiliated colleges were putting in efforts to encourage Alumni entrepreneurship by providing seed money, space, networking opportunities, and mentorship opportunities.
4. Challenges:
 - Lack of Dedicated Teams: 60% of non-elite colleges had no alumni relations office, relying on overburdened faculty.
 - Technological Gaps: Absence of CRM tools led to "lost alumni". 35% of graduates were untraceable post-5 years.
 - Faculty Resistance: 45% of professors viewed alumni as peripheral stakeholders rather than partners.
 - Alumni Skepticism: 50% doubted institutional commitment, and Alumni from affluent institutions often don't feel a pressing need to give back—unlike IIT alumni, who see their success as tied to their alma mater's reputation.
5. Policy & Accreditation Gaps

Only 8% of the NAAC criteria explicitly measured alumni engagement, reducing institutional accountability. NEP 2020 Alignment: While NEP emphasizes industry-academia collaboration, alumni roles remain undefined.

Limitations of the Qualitative Design

The qualitative study of the paper offers a rich and contextually embedded insight into alumni engagement in India, but several limitations must be acknowledged. First, the sampling of 49 Participants from 8 Engineering colleges in Andhra and Telangana indicates that the findings may not represent the broader section of higher education. The sample selection also limits the statistical generalizability and increases the selection bias. In addition, geographic concentration, i.e., the engineering colleges can restrict the applicability of results to institutions of other disciplines. The depth and richness of the qualitative inquiry come at the cost of time-intensive analysis and challenges in scaling other populations

The findings reflect a persistent disparity between premier and affiliated colleges in India regarding the strategic use of alumni networks. Premier institutes, such as IITs, leverage their alumni networks and secure 40% of research funding for their projects. In addition, these premier institutes, in line with Stanford's global network approach, facilitate placements. Alumni of these institutes serve as ambassadors and recommend their students for internships, international collaborations. In contrast, affiliated colleges face a fundamental challenge of an outdated alumni database and restrict themselves to annual cultural events with a limited focus on sustained outcomes-based engagement. This lack of systemic tracking diminishes the motivation and potential for deeper long-term collaboration.

3 C framework as a driver of impact:

This study confirms the potential of the 3 C framework – Connect-Contribute and Co-Create as an operational model for sustainable alumni engagement. The case studies of BITS Pilani and IITs' global mentorship program by applying the Connect and Contribute increased the student employability by 25% which demonstrates measurable outcomes. The framework also aligns with the social capital theory, where structured networking among the alumni supports reciprocal value creation. In contrast, the affiliated colleges with the co-creation model have shown a 50% decline in alumni contributions, highlighting the need for sustained engagement pathways.

Bridging the Gap through Policy and Governance Reforms

The gap between the policy intentions and the on-ground reality underscores the need for systemic reforms. Even though accreditation bodies like NAAC, NBA drive change by assigning 10% weightage to alumni engagement metrics, the affiliated colleges get that score by fulfilling the nominal criteria, not by fostering alumni engagement demonstrated by premier institutes.

Digital transformations:

The integration of AI-powered alumni management systems, especially with LinkedIn, can revolutionize engagement, and digital tools can enable real-time tracking of alumni career trajectories and assist in designing programs based on industry requirements, empowering colleges to respond to evolving talent needs

Corporate partnerships:

Linking Corporate social responsibility (CSR) allocations to alumni-led skills development programs could multiply impact. The Infosys Campus Connect model, when alumni-driven, ensures curriculum alignment with industry needs, thereby fostering employability. Alumni act as facilitators and role models, bridging classroom learning with real-world expectations. This approach not only enriches the curriculum but also strengthens alumni–corporate–institution partnerships, fostering a sustainable ecosystem for student growth and career success.

VI. DISCUSSION

TABLE II

KEY QUANTITATIVE OUTCOMES OF ALUMNI ENGAGEMENT INITIATIVES

Metric/Outcome	Quantitative Finding
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Higher Employability via Alumni	25–30% increase
Industry-Academic Collaboration	40–45% improvement
Tech Start-up Funding (Alumni)	35% of total funding
Graduate Placement Rate (IIT/BITS)	27–33% higher than average
Alumni-Funded Research Projects	38–40% of total research funds
Alumni-Driven Mentorship Participation	Up to 58% interest, 12% engagement

CONCLUSION

Alumni networks hold great potential to transform the higher education landscape by bridging the skill gap, fostering innovation and enhancing employability, yet are an underutilized resource due to weak digital infrastructure, policy gaps, and fragmented engagement strategies.

The 3 C Framework- Connect- Contribute & Cocreate provides a structured approach to harness the contributions of alumni as executed by the premier institutes for leveraging the alumni networks for mentorship, research funding, and industry collaboration.

To replicate the success stories, all affiliated colleges, systemic reforms should be integrated into accreditation frameworks, like NAAC, NBA, for the deployment of AI-powered CRM systems and incentivize corporate-alumni partnerships are essential. It is also important to reposition alumni as strategic partners instead of passive donors to ensure alignment with the goals of NEP 2020, institutional growth and global competitiveness.

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