

10. TECHNICAL UNIVERSITY: OPPORTUNITIES & THREATS

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Abstract

Engineering education in our country has grown phenomenally with lakhs of students taking admission, thousands of colleges getting established and many branches of specialization coming up. Owing to ongoing globalization and rapid technology changes, the demand for technical personnel is on the rise not only in our country but even outside. We see the emergence of attractive opportunities and challenges like attracting students from across the globe, new innovative courses, meeting the demand of the employment sector and so on. Separate 'Technical University' seems to be the need of the hour, as the traditional university setup is unlikely to meet the demand. Our country is moving positively in this direction.

This article is an attempt to address and sensitize the different components of the engineering education system with the right mindset for moving forward to a separate university status. It deals with the need for separate university and the various concerns associated. Useful tips are also proposed to overcome these hurdles to ensure the successful birth & growth of a technical university.

1. Introduction

The question one would be tempted to ask today is whether the country is in the need of more & more technical universities and if Yes, why? The answer is 'YES' in the opinion of the authors as the country has enabled the birth of a few thousands of technical institutions which need to flourish and deliver the expected. Presently, the major portion of engineering education in our country is managed by general universities. In this setup, engineering colleges are members of the group of colleges associated. Since a general university manages a wide range of disciplines like Arts, Science, Commerce, Engineering, Medical and Law

under a single umbrella, engineering education fails to receive the due attention, it deserves.

2. Need for a Technical University

We see two important happenings: the globalization and rapid changes in the domain of technology bearing consequence to trade, industries, culture, finance, education, literally all walks of our life. The market for technical personnel is fast increasing crossing geographic boundaries. There has been astonishing growth in engineering education in our country with lakhs of students taking admission, thousands of colleges getting established and many branches of

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specialization coming up. There is scope and challenge of offering new innovative courses. We have the golden opportunity to attract students from across the globe. The engineering education system has to respond quickly and come up to these expectations. The traditional 'general university' setup is unlikely to meet the purpose, because:

- Engineering education is unique. Its promoters need to be proactive and fast acting.
- Larger size of the general university setup would demand more time for its action challenging speedy growth of engineering education affecting variety of factors like curriculum upgradation, floating of new innovative courses, etc.
- Several unforeseen factors disturbing the academic schedule could happen.
- An unbalanced financial resource sharing could also be considered as a factor in support of a separate technical university.

The significance of a separate technical university is well conveyed in the decree[1] that setup a technical university which reads as: "Besides the Classical Universities, centers of high culture and scientific research, the time has come for Technical Universities to be formed, teaching about how economic life should be developed, with all the material requirements of modern civilization and, for this reason, it was proposed that the higher technical schools should be linked more directly with one another for collective economic purposes, and that greater value should be given to the professions for which they prepare people, and which represent fundamental activities for the nation's existence and progress."

3. Issues of concern & the way forward

It's important that the approach towards technical university is treaded carefully. There should be continuous monitoring to improve the

performance of university as perceived by the industries, students and their parents. Several points of concern should be borne in mind to ensure smooth & successful functioning of technical university.

3.1 Governance

Effective & efficient governance demands several things to be in place for running a technical university.

Leadership

Leader of the university, vice chancellor or pro chancellor, has to deliver a wide range of performance taking into account demands & supply scene, socio economic concerns, etc.

The leader has to be a visionary, technically competent with a high degree of maturity and hard working, too. Almost an 'all in one' sort of requirement!

Administrative Setup

Technical university requires a systematic and well defined administrative setup. There are different approaches towards realizing right and efficient administration. One of them is process & procedure based approach guaranteeing the decentralization & different action groups with well cutout responsibilities, guidelines & expectations. Following are a few functional heads and their expected activities.

General Administration

- Preparation of the University Constitution, policy matters and revision of the same periodically.
- Recruitment and career management of the faculty and general staff; Assigning judicious responsibility to the faculty commensurate with their cadre and capability; Monitoring mechanisms for work culture, discipline and behavior.
- Consultations & discussions on a regular basis.

- Internal quality improvement programs.
- Data base management.
- Design and maintenance of university website.

Academic

- Drawing annual calendar.
- Framing and upgradation of curriculum; Teaching Learning Process; Lesson plan; Teacher's diary; Theory & laboratory practices, projects & seminars: conduction and evaluation; Preparation of laboratory manuals; Recognition and reward for best teaching practices.
- Awarding grades/degrees.
- Feedback mechanism (from students, peers, superiors, subordinates) with corrective measures; Student counseling; Academically week student management; Co-curricular and extracurricular activities.

Examination and Evaluation

- Question paper setting; Continuous assessments, Examination schedules; Results.
- Grade cards.

Training & Placement activities

- Personality development & industrial training programs; Contacts with potential employers and campus recruitment activities.
- Faculty development programs.

Co-curricular and Extra curricular activities

- Co-curricular activities away from the classroom for imparting technical knowledge backup.
- Extracurricular activities for holistic personality development.

- College magazine; Bulletin.
- Infrastructural needs for sports & cultural activities.

Research & Developmental Activities

- Testing & Service facility: to cater to the needs of the industrial arena of the region in terms of technical testing, economic & technical evaluation, etc.
- Research and developmental works driven by societal or industrial needs.

Campus infrastructure maintenance

- Maintenance of the civil structures, the electrical installations and communication network.

3.2 Clarity of Vision

The vision for the technical university is to be clear and unambiguous [2]. Big dreams but minute accomplishments give a hollow image! The deliverables are to be more realistic and practically accomplishable, commensurate with strengths.

Such a vision should meet the expectations of the clientage. We should bear in mind that moves to establish 'special' status among the peer group and generation of additional revenue like launching brand new courses, require competent faculty, modern laboratory setup, additional classrooms etc. Clarity of this aspect goes a long way in reaping maximum benefits. The vision may be divided in to steps, missions or short term goals, with well defined time frame. Needless to say, larger participation ensures greater returns.

3.3 Credibility

At any cost, the credibility of entire university system should not be allowed to collapse. Maintenance of quality & high academic standards, thus becomes critically important. All processes & operational details should receive due attention. If technical university is

not very serious about its functions & relaxes the academic standards, the students and parents might take the degrees and grades for granted. The credibility of the entire system will collapse. The image of the university shrinks in the market affecting adversely the number of aspirants for admission. It is imperative that the university has to carefully tackle the credibility issue as regards different domains such as academics and evaluation

Academic Competence

The technical university should be robust in its academic competence which details its readiness to ensure:

- Good students
- Competent teachers
- Well designed curricula/syllabi
- Adequate infrastructure & facilities
- State of art teaching pedagogy & tools
- Fair & Transparent examination & evaluation mechanism.

Evaluation

Whether a degree is to be given or earned is unfortunately becoming an issue in the present circumstances. A good university has to exercise its choice correctly. The university is expected to take every effort to ensure fairness & transparency in the evaluation process, observing meticulous care. This is one area where external inputs render scope to earn credibility.

Vigilance

In the absence of vigilance, the technical university could develop an audacity of doing anything and getting away with it, which will be detrimental for the technical university in the long run.

A feeling of being watched by oneself is a remedy to an extent. However, well laid

monitoring & evaluation procedures are a part of the university in establishing vigilance on its functioning. Regular peer rating of performance, both internally & externally, should be the features of a good university setup. Incidentally, peer bodies would also be a source for introducing more & more best practices for strengthening the university.

3.4 Projection & Public Interaction

A technical university cannot live in isolation. It should be sensitive to its image or rating as perceived by different segments like students, parents and public in general as it bears a direct influence on the quality and quantity of admissions. It is thus important that the university & affiliated colleges are to be projected rightly and emphatically to the society at large & the potential employers in particular. The university should proactively reach out to these segments through Industry-Institute Interactions, Community Oriented Activities, and interaction with Parents. Towards this end, periodic media coverage could also be thought of.

Expectations of the youth being different, similarly needs of the employment world being diverse, both preparing & practicing customization, would be most desirable. Authors feel this thinking is reasonable as it is difficult to expect a university to excel in all.

3.5 Establishing benchmark

It is most desirable that the educational activities to the maximum possible extent originate from the university campus itself. This would serve both to demonstrate the implementation aspects of programs and as benchmark for other affiliated colleges to follow. Perhaps in this background several universities have followed the concept of a "University College".

3.6 Outreach

An enthusiastic university could work to address its ambitious objectives through the

concept of extension centers with specific technology goals. This would not only facilitate sensitizing student community to the societal needs more effectively, but also provide scope to exert its influence to the region, in particular. Then, the university would also be in a position to nourish small scale entrepreneurs, private professionals, and even participate in technical training programs for the reinforcement of the locality.

4. Conclusion

A separate technical university, no doubt, is a step towards decentralization and giving due attention to engineering education. However, this in itself may not serve the purpose if the size of the university is too big. Thus, we converge to a model for a technical university as the one which is small in size and addressing the different aspects deliberated in this article. This attractive model ensures synthesizing domain expertise of affiliated institutions for tangible benefits through R&D activities, as well.

By virtue of its focus on specific targets, it will be more suitable for deliverables. It is easier to realize the cohesive and synchronized existence of the affiliated colleges. This type of modelled university is, thus believed to be more a success model.

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