

# Building tech startup culture through colleges for generating National and International Opportunities

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## Why India needs more startups

Nearly 10 million youths reach employable age every year in India. They may be graduates, diploma holders, vocational graduates and so on. However, are there enough jobs for these young adults? No!! Frankly speaking, a problem of this scale does not exist in any other country. We cannot arrive at a solution for this easily since we do not have any similar models in other countries to compare, learn and apply. Since 1990s, after liberalization happened in India, foreign investments have led to creation of jobs in a phenomenal way. However, job creation has not been consistent and stable in recent times. Obviously, a better solution for this would be to create numerous startups nationwide. Therefore, the best exercise would be to arrive at new mechanisms to accelerate the creation of quality startups.

**While there are plenty of schemes/funds coming up for startups and entrepreneurship training, one should remember these schemes will not be effective if there aren't any mechanisms to nurture pre-startup activities in colleges/schools especially engineering colleges.** The article provides a broad outline of **why** we need startup culture, **what** pre-startup activities can be brought in and **how** such pre-startup activities can be run through college infrastructure/resources.

## Foreign investments, exports and employment opportunities

No doubt, foreign investments and export of IT services have provided enormous job opportunities for software engineers, automobile, electrical / electronic engineers, diploma graduates, etc. for nearly three decades since 1990. Of course, it led to the growth of various industries like real estate, hospitality, travel services, etc. because average salary levels of working population were increasing steadily. Media has been consistently going gung-ho over impressive growth rates in India since 1990s. In fact, India's branding in the international market has improved over the years because it is seen as a large country with better growth rate than most countries.

However, excitement over growth rates and large consumption market powered by huge working age population has actually eclipsed so many issues that are beginning to show up in detrimental ways in India. In recent times, the most visible consequence of this negligence is the disturbance in IT sector and its impact on engineering education.

## Engineering education and IT industry

During 1990s, engineering education was seen as a privilege because of limited number of engineering colleges across the country. Either a person would have to spend substantial amount of money for paid category admission or should have some academic excellence to gain admission to engineering colleges. So, not everyone was aspiring for admission into engineering colleges. However, IT outsourcing to India picked up steam after 1995. Though the employability of engineering graduates was not that great, the sheer demand of IT manpower simply skyrocketed and large companies thought it would be okay to spend money to train and nurture fresh engineering graduates for one year or so. **The cost of training engineering graduates was miniscule compared to the amount of revenues these IT companies were generating. In fact, this trend continued till 2015.** Though this practice was becoming unaffordable for companies since then, college management started feeling the negative effect of this change only recently. Large tech. companies are drastically cutting down campus placements and overall hiring.

Before we delve deeper into the intricacies of engineering education in India, it's worthwhile for us to understand how engineering/technical education runs in most countries. For extremely complex problems, it's also better to zoom out and view them like an outsider.

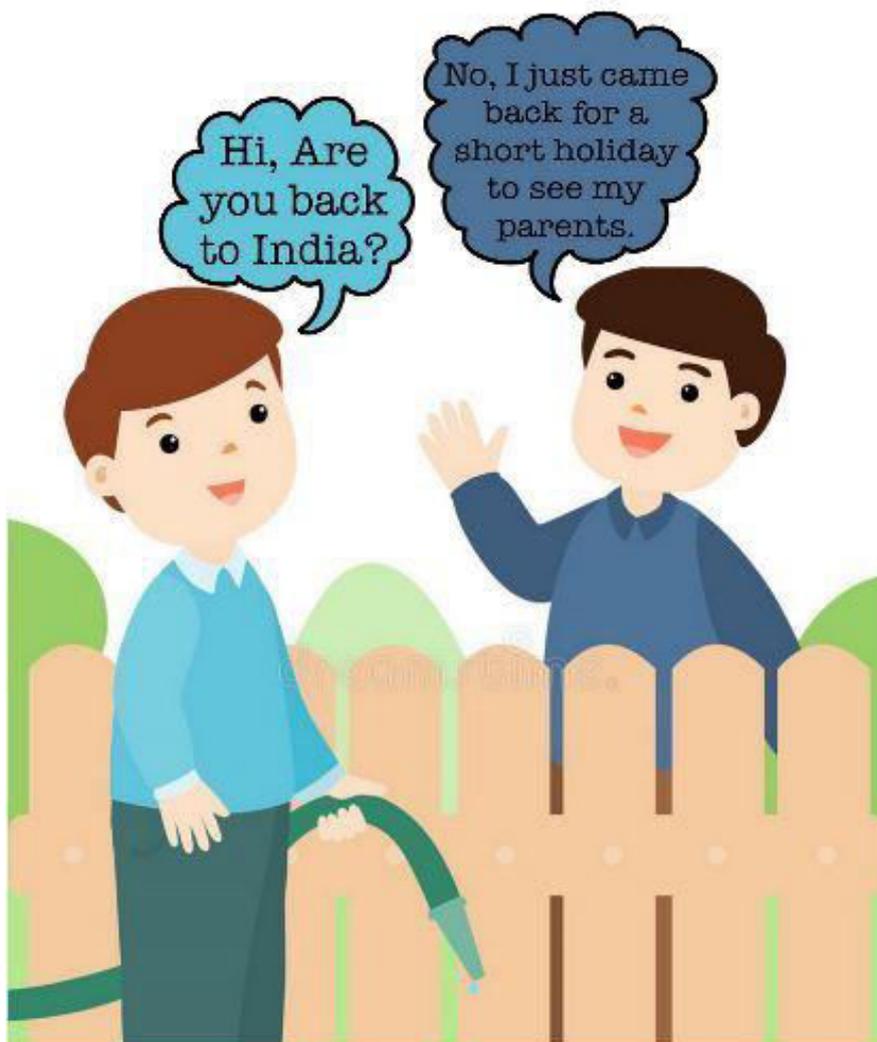
## Engineering education in other countries

It may not be possible to compare Indian engineering education system with all countries of the world. However, we can just do a quick analysis of systems prevailing in rich, middle-income and poor countries.

Rich countries of the west have a mix of private and government aided educational institutions. Most of these countries established a strong financial foundation during Industrial revolution. They have a fairly good employment opportunities in a variety of sectors and hence multiple opportunities for a stable life. Perhaps, this is one reason why there has never been a mad craze for an engineering degree there. They have never witnessed mushrooming of engineering colleges for this

reason. Also, only those students who had analytical/mathematical mindsets during high school days opted for engineering education. Whereas in India, a student who may not have had any involvement in scientific or engineering projects may simply opt for engineering college just for the sake of peer pressure or status symbol. I am not talking about students who do this because of parental pressure, rather I am talking about students who simply want to get an engineering degree because they have seen some friends/relatives or neighbors go abroad and lead a great lifestyle. In other words, they have seen friends who had very little technical inclination during high school, obtain engineering degree and work for popular IT or tech companies. **Notwithstanding this trend, it's worthwhile to note that non tech. businesses in rich countries have always been quick to spend good amount of money and resources far higher than non tech. businesses in India.** Managers in such non-tech businesses of western countries may be Arts/Humanities graduates but they maybe in-charge of handling complex business processes involving implementation of top-notch software tools like ERP, etc.

Figure below shows the conversation between a school kid and a professional with overseas job.





In middle-income countries, number of engineering colleges is likely to be lower and the standard of education may not be that great. **However, those students opting for engineering education in certain Asian countries may have a strong attitude towards problem solving.** Even if quality of the faculty or curriculum is not top class, when students who have the determination to grasp societal/industry problems are likely to acquire better skills and become entrepreneurs or be quickly absorbed by the industry as employees. Also, these countries depend on various sources of income like natural resources, tourism or some specific niche industry. Because of diverse nature of their incomes, they may not have the pressure to depend on IT sourcing income like India. However, **non tech. businesses in upper middle-income countries may still spend some amount of money and resources somewhat higher than non tech. businesses in India.**

Finally poor countries in Africa or in Latin America/Central Asia may have very little resources to offer high quality education. Students from these countries will definitely be willing to come to India for higher education. Though majority of the businesses may not have the budget for buying IT and engineering resources from India, there are considerable number of large enterprises in these poor countries that can provide decent revenues for tech. companies in India.

### **Peculiar Fabric of Engineering Education In India**

As of today, majority of engineering colleges are worried about maintaining revenue streams whereas tech. companies cannot afford to hire large pool of manpower from engineering colleges. On the other hand, Governments face enormous challenges to provide livelihoods to graduates through employment or entrepreneurship route. To understand the causes of this dilemma, one has review the history of engineering education for the past three decades. Engineering colleges in India have been built based on spurts in demand during the boom period. **While it's always a good idea to build any business based on demand and supply, education does not always work that way.** Education sector simply did not worry about the yardsticks for measuring the quality of technical education but was simply carried away by demand and supply logic. Education sector is not a simple commodity to be governed by simple demand and supply logic alone but we also need to understand what format of engineering education would make sense from time to time. **If this validation of format of education is not reviewed on an ongoing basis, we need to face dire consequences like how a person suffering from diabetes would face slow and steady killer symptoms.** We had several warning signals during the last three decades but

we did not see that as a wake-up call and use that as an opportunity to fix a proper foundation for engineering education. In the next section, we will see how the format of engineering education can be tweaked based on industry trends, international practices and experiences.

## Engineering and software projects for Startup Culture

As mentioned in the beginning of the article, doing pre-startup activities/exercises would be more essential for nurturing startup culture rather than simply creating startup funds, hackathons, grand challenges, etc. **Many investor groups often claim that there is no shortage of funds for Indian startups; it's only the shortage of investible ventures that's preventing investment growth in India. In this context, what the author implies by the phrase "Nurturing Startup Culture in colleges" is a series of activities/exercises in colleges to create a proper mindset amongst students leading to faster creation of quality startups.**

Let's see what format of engineering education would make sense for nurturing Startup Culture. We can classify various engineering and software projects into two broad categories:

1. **Patent winning or high intellectual property value types**
2. **Process driven projects based on preset standards and practices**

For a very long time, employers in India were focused on type #2 projects. Hiring of engineers for this type of work has been dominant. In recent times, employers for type #1 are beginning to increase but for a country of India's size, they are not enough. **In many countries, students are exposed to type #2 projects during college or sometimes during school days. In fact, these project activities are treated as learning exercise in these countries** whereas in India, candidates are involved in both types of projects only after employment. Even more alarming is the fact, candidates typically consume one or two years after employment for attaining basic tech. skills and maturity of mind to face the world. **This is a huge cost burden for companies/startups for imparting basic skill training.** Current skill training schemes are not sufficient as they are still based on rote learning rather project-based activities.

Any project with decent intellectual property value(type #1) involving scientific, engineering or software development typically may require a team of varied skill levels. This is also true for many **research and development projects** involving multi-disciplinary approach. In developed countries, engineering students experience type #1 projects during college days and Arts/Humanities students involve themselves in type #2 projects. This is one reason why it's easier to allocate substantial funds for research and development funds in these countries while India is still struggling to increase R & D spending beyond IITs. Of course, considerable amount of IP creation happens in IITs but a country of India's size would need different flavors and varieties of startups that cannot be exclusively engineered from IIT's ecosystem. Of course, IIT's ecosystem generates startups that attracted the best of big investors probably because investors found them safe to invest. However, there are considerable number of non-IIT innovators and entrepreneurs who have left India but they found support from places like Harvard (USA), etc. To quote another example, billionaire tech. entrepreneur, Peter Thiel often says things like **Education is optional for successful entrepreneurs** and he does not give much importance to the education of founders while identifying ventures to invest. In fact, Peter Thiel funds students to drop out of college and join the coveted and controversial fellowship program funded by his foundation. Young entrepreneur from India, Ritesh Agarwal dropped out of college and opted for this Peter Thiel fellowship to earn \$100,000 from USA. Ritesh Agarwal later became India's youngest billionaire. Eco-system in India does not lend great support for such thinking and hence we do not have sufficient flavours of startups that would be expected from a large country like India.

Even when Ritesh Agarwal's company, OYOROOMS had made it big, Agarwal was the only dropout heading a team of 10-20 people from IIMs, more than 200 people from IITs, Harvard Business School and Ivy leagues. What I am trying to say is that fast growing Unicorns like OyoRooms do need teams from IITs, IIMs and Ivy Leagues; India has the mechanism to produce such team members, however, mechanism to nurture people like Ritesh Agarwal came from Silicon Valley people like Peter Thiel. If we build similar mechanisms in India, we can nurture / accelerate more startups in India to generate huge employment and fuel economic growth in an unimaginable way.

The author has been pushing for certain activities in colleges that will help not only in the identification of right people like Ritesh Agarwal but also create nurturing eco-system ( nicknamed "**Startup Nectar**" ) around such people to grow and scale up.

## Obstacles for Startup Nectar

In India, despite massive propaganda for startups, there has been some resistance against the implementation of any form of **Startup Nectars**.

- Skewed attitude and aptitude of aspiring engineers
- Enforcement of new learning techniques by the faculty and college administration

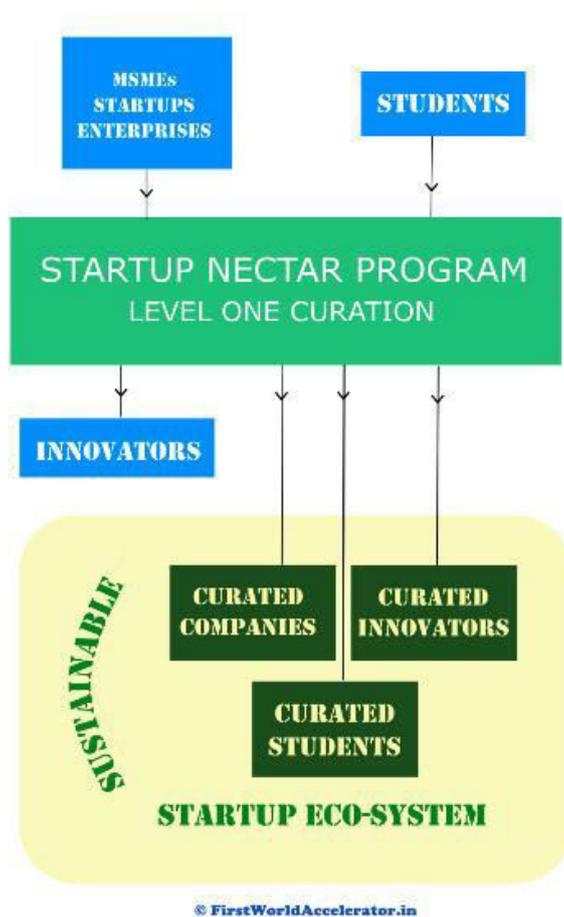
- Resources needed by companies to engage students/interns
- Orientation for Parents to allow kids for work based learning methods
- College Management’s addiction to affiliation as opposed to producing real results

The resistance level was very high when the author tried to inculcate any form of startup culture in colleges several decades ago. However, in recent times, co-operation from college management has been steadily building up though very slowly in baby steps. Since colleges have been mostly accustomed to perform purely for affiliation purpose, they take just baby steps rather than giant leaps. Despite this general trend, there have been some colleges in India who have tried small but significant ways to nurture startup culture without waiting for schemes and affiliation points.

### Framework of Startup Nectar

As mentioned in the beginning of the article, series of pre-startup activities are needed in college campuses to create a pre-startup eco-system code-named Startup Nectar. This eco-system will gradually overcome resistance from various fronts and will create new believers and contributors for the startup eco-system. Also, it will make governments and industry associations to bring out new policies and schemes. Based on the interactions of the author with college owners and industry associations during the last couple of years, there are signals of growing positivity and some real action.

Based on various experiments conducted by the author, the framework that works for Startup Nectar is outlined below:



The above diagram is the output of several decades of research and pilot projects. Also, the most effective output can be seen if innovators, scientists, startups, enterprises and students are brought in from different parts of the globe. This is usually time-consuming and expensive but from the author’s experience, it is worth the effort to reap substantial dividends.

### Conclusion

We need more educational institutions to spend more time and resources to accommodate new frameworks like **Startup Nectar** as part of their overall activities in the college. They need to understand it will also help in getting worldwide recognition and branding in the long run far better than short time programs. Many of the educational institutions in developed countries have been doing this for several decades and they can easily derive inspiration from them while remembering to make local orientation to suit Indian students.

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## About the Author



Parameshwar Babu is a serial entrepreneur and mentor who has more than 20 years of experience in running various tech. ventures. He created award-winning Java software that became a popular product across the globe bagging orders from NASA, US department of defense and also resulting in mushrooming of Internet Cafes/Browsing centers across India. After 2006, he was instrumental in creating various e-commerce frameworks for a variety of industries like retail, fashion/garments, entertainment/music, education, manufacturing and hospitality. Since 2010, he has mentoring and nurturing entrepreneurs from diverse backgrounds across India and also helping overseas companies to establish collaborative projects India. Some of the startups mentored by him have been winning awards in India and abroad every year. He plays a very active role as committee member in various industry associations and chambers of commerce in India and abroad. He has been pushing for international support for Indian Startup eco-system through such committee activities and has been delivering talks as a key speaker for events organized by CII, AICTE and various business associations/chambers of commerce.

## Top 25 Marketing & Entrepreneurship Books For 2019

There are countless lessons to learn as a business owner, entrepreneur, marketer, or manager. It's always helpful to gain new perspectives and learn from the business mistakes of others instead of learning the hard way. Business books from the best experts in their industries can be an effective and low-cost way to gain additional insight that will benefit your company. They can also help to keep you motivated during the many challenges that you'll face in business in 2019 and beyond. Here are 25 of the top business books for entrepreneurs and marketers from some of the top business minds in the world (in no particular order) in 2019.

<https://www.myfrugalbusiness.com/2018/08/top-books-entrepreneurs-marketers-managers.html>

## The Science Of Entrepreneurship: Assessment, KPIs And Measured Tactics

Businesses nowadays are very competitive and fast phasing. The drastic changes in business world needs better strategic planning and actions in order to reach its potentials along its organizational goals and ambitions. Every day is an opportunity for every venture to make itself on the top, and this has been part of every business' aspirations. To attain this, better strategies must be developed. There are planning tools that are always available to help managers and their team create, monitor and assess their goals and the actions taken to achieve it.

Along with other strategic planning that is appropriate for your business, the Key Performance Indicators (KPI) and other business metrics is a big help for any venture to identify, recognize and understand the goals that are striving to reach, and how every actions taken can contribute to its fulfillment. Anyone does not want to become blind and clueless on everything that is happening on their organization, that is why they need to have business measurements specially to aid them in decision- making process.

Generally, metrics are used to measure particular points for a particular period of time, However, KPIs exist to symbolize an organization's certain objectives, at the same time measure an action or performance against a specific target. Every target has its own definition whether in strategies, planning or budget categories and with it comes its range of performances that needs to be done. These are comprehensive measurements that are used as guidance in any business objectives. Moreover, KPIs can also be used when dealing with people or clients outside the workplace. With this, it can be analyzed that any KPIs are metrics, but not all metrics can be considered as KPIs.

Every KPI stipulates emphasis on improvements in operational and strategic perspectives of the business, essentiality of creating analytical foundations in decision-making, and the need to just focus on every detail that matters most.

<https://www.myfrugalbusiness.com/2019/05/science-entrepreneurship-assessment-kpi-metrics.html>