



# INVENTIONS, INNOVATIONS AND START-UPS IN HIGHER EDUCATIONAL INSTITUTIONS

<sup>1</sup>Dr. John Paul Pulipati, <sup>2</sup>Dr. Kezia Rani Burgula,

<sup>1</sup>Principal, principal@mrce.in, Malla Reddy College of Engineering, Hyderabad, India

<sup>2</sup>Associate Professor, CSE Department, keziarani@stanley.edu.in,  
Stanley College of Engineering for Women, Hyderabad, India

## ABSTRACT:

The paper advances current knowledge on factors affecting higher education institutions in their quest for innovation in education. This paper takes an innovative approach by adopting the concept of ‘innovation systems’ and adapting it for higher education. The analytical construct of ‘higher education innovation system’ has thus been developed as a sub-set of an innovation system, concentrated particularly in higher education institutions which are close connection with other institutional spheres, such as industry, government and non-government agencies, and the society at large in terms of Internship and innovation process. As the part of the interns discussed with classification internship and also how it has been played major role in the institution towards to the Higher Education process. In higher education innovation system has to be following with set of functions, components and relationships, which allow us to disaggregate the various levels of interactions among the elements of the system and analyse the unfolding of innovation in higher education. Results indicate certain “disengagement” in relation of higher education institutions and education policy makers, business, and students as well as between higher education institutions’ managers and their subordinates. Based on the findings, major innovation, incubation and startup related challenges in the higher education are discussed and related practical recommendations are presented.

**Key words: Innovation, start up, intellectual property rights, entrepreneurship, technology transfer, technology commercialization, technology policy, university-industry links, economic development, R&D, knowledge management, incubation**

## INTRODUCTION

Higher education is changing across Indian and other global countries and there is a growing expectation from policy makers and society that higher education institutions (HEIs) should evolve into a new type of economic actor. Entrepreneurship and innovation in higher education are no longer only associated with business start-ups and technology transfer but are increasingly understood as core elements of a procedural framework for how organisations and individuals behave. For example, in how links between teaching and research are created and nurtured, how societal engagement and knowledge exchange are organized, how resources are built and managed for effective partnerships, and how new entrepreneurs are supported [1].

One of the major contributions in fields of application and impact of innovation, incubation and internship in HEIs has been laid forward by William Spady, a sociologist and the father of Outcome-Based Education (OBE). OBE is referred to by over 20 different names including Systemic education restructuring, Performance Based Education, Standards based education reform, High Performance Learning, Total Quality Management, Transformational

Education, and Competency-Based Education [8-14]. Outcome-Based Education [2-6] means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences. This means starting with a clear picture of what is important for students to be able to do, then organizing curriculum, instruction, and assessment to make sure this learning ultimately happens. The keys to having an outcome-based system are [9-10]:

1. Developing a clear set of learning outcomes around which all of the system's components can be focused.

2. Establishing the conditions and opportunities within the system that enable and encourage all students to achieve those essential outcomes.

For example, the possible outcome "explain the major causes of inflation in capitalist economies" implies that to be successful, the learner will be expected to develop both the competence of explaining and knowledge of major causes of inflation in capitalist economies. Since outcome-based systems expect learners to earn out the processes defined within an outcome statement, they are careful to build those processes directly into the outcome through demonstration verbs. Therefore, one key to recognizing a well-defined outcome is to look for the demonstration verb or verbs that define which processes the learner is expected to carry out at the end. Without those verbs, what are called outcome statements lack a clearly defined demonstration process, and without that defined process the outcome statement takes on the character of a goal rather than a true outcome demonstration [11-12].

1.2 Program Educational Objectives (PEO) Graduates are able to:

1.2.1 PEO-1: Work in automotive and related industries by applying the knowledge of science, mathematics and engineering.

1.2.2 PEO-2 Demonstrate team work and project management skills in a multi-disciplinary environment through effective communication, modern tool usage and professional ethics.

1.2.3 PEO-3 Investigate, analyse, research

and solve problems in the field of automotive planning, designing, manufacturing, testing and servicing.

1.2.4 PEO-4 Pursue lifelong learning through professional trainings and practices with consideration of safety, environment and sustainability

Following are the Program Learning Outcomes (PLOs) adopted in Automotive Engineering Program as recommended by PEC in their Manual of Accreditation 2014.

1.2.5 PLO-1 Engineering Knowledge: An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

1.2.6 PLO-2 Problem Analysis: An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

1.2.7 PLO-3 Design/Development of Solutions: An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.[3,4]

1.2.8 PLO-4 Investigation: An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.

1.2.9 PLO-5 Modern Tool Usage: An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

1.32.10 PLO-6 The Engineer and Society: An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the responsibilities relevant to professional engineering practice and solution to complex engineering problems.

1.2.11 PLO-7 Environment and Sustainability: An ability to

understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

1.2.12 PLO-8 Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

1.2.13 PLO-9 Individual and Team Work: An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

1.2.14 PLO-10 Communication: An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

1.2.15 PLO-11 Project Management: An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.

1.2.16 PLO-12 Lifelong Learning: An ability to recognize importance of, and pursue lifelong learning in the broader context of innovation and technological developments.

### 1.3 A S K (Attitude Skill Knowledge)

Attitude, skill and knowledge [1,2], all the three elements put together form a success formula. It is a well-known fact that any person with a remarkable blend of all the above mentioned 3 characteristics will come out as a human being with lots of intelligence, leadership qualities and mentoring abilities. But, the question is, Can any one of these attributes stand alone and guide a person to the zenith? The answer is probably NO. As, we all know and understand that in the present era of competitiveness and naivety every individual is expected to be skillful, knowledgeable and also must possess a correct set of attitude which is universally acceptable. A person with only a bucket full of skills required to complete a task with a very less amount of knowledge on the subject and probably with a poor attitude cannot be considered useful for an organization for the long run. If you don't have

skills, it can be acquired. If you don't have knowledge, it can be gained. But, if you don't have attitude, you are in trouble. Attitude, in a general sense is taken negatively. The triangle of success represented by ASK is shown in Fig. 1 [21-23].



Fig. 1 Attitude, skill and knowledge- The triangle of success

### 1.4 Blooms Taxonomy

Bloom's taxonomy is a set of three hierarchical models used to classify educational learning objectives into levels of complexity and specificity. The three lists cover the learning objectives in cognitive, affective and sensory domains. Various stages of Blooms taxonomy is shown in Fig. 3 [13-18].

#### 1.3.2 The Revised Taxonomy (2001)

A group of cognitive psychologists, curriculum theorists and instructional researchers, and testing and assessment specialists published in 2001 a revision of Bloom's Taxonomy with the title A Taxonomy for Teaching, Learning, and Assessment. This title draws attention away from the somewhat static notion of "educational objectives" (in Bloom's original title) and points to a more dynamic conception of classification.

- Remember o Recognizing o Recalling
- Understand o Interpreting o Exemplifying
- o Classifying o Summarizing
- o Inferring o Comparing o Explaining
- Apply o Executing o Implementing
- Analyze o Attributing
- Evaluate o Checking o Critiquing
- Create o Generating o Planning o Producing
- Differentiating o Organizing

Bloom's revised taxonomy is shown in Fig. 2.

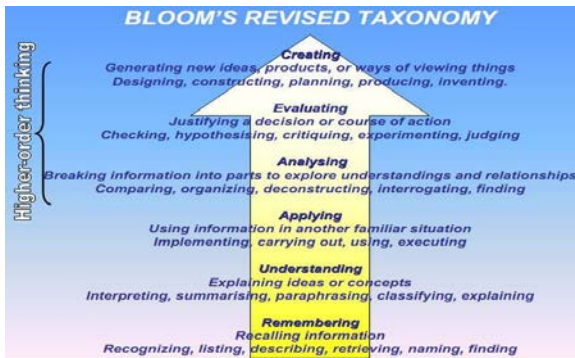


Fig. 2 Bloom's revised taxonomy

## II Internship:

An internship is an official program offered by an employer to potential employees. Interns work either part time or full time at a company for a certain period of time. Internships are most popular with undergraduates or graduate students who work between one to four months and have a goal to gain practical work or research related experience. The main difference between an apprenticeship and an internship is that internships are more exploratory. You're not bound to work for your employer after the internship is over (although many interns do receive job offers). If you start early enough to do a few internships throughout college, you can use the first ones to get a feel for what career you'd like to pursue and the later ones to build your experience. Internships can be paid or unpaid. For example, in California, unpaid interns must receive college credit for their work.

### 1 Benefits for Internship Program

1. Tech-savvy. The first generation to be brought up with computers, members of Gen Y are "digital natives." In fact, not only can they uncover, operate, and recommend the most advanced technologies; they can teach you how to use tools like content management systems and social media.

2. Cost-effective. Compared to other populations, Generation Y appears less motivated by money. A study by UNC's Kenan-Flagler Business School<sup>4</sup> found that millennial prioritize meaningful work over higher pay.

3. Intrinsically motivated. As the results of the Kenan-Flagler Business School study demonstrate, millennial want to grow, develop, and advance within the workplace. They are intrinsically motivated to succeed, a quality all

employers seek in their employees.

4. Team players. If some called Generation X "The Me Generation," we might term Generation Y "The We Generation" for their heightened sense of community and peer-to-peer relationships.

5. Highly educated. Millennials are on track to be the most educated generation yet. According to a 2016 study by the Pew Research Center, 20 percent of millennials were college graduates, with an additional 40 percent still in school. About half of millennials still in school planned to earn a graduate or professional school degree, and many millennials who had graduated planned to return.

6. Optimistic. Positivity in the workplace is invaluable to company culture and team morale, just as negativity can be extremely detrimental.

7. Current. Like employing any youth generation, hiring millennials helps keep your company up to date with social, entertainment, and other market trends. Millennials offer a fresh perspective and can generate marketing strategies that appeal to younger generations of consumers.

2.3 Role of Internship coordinator—this person generally works in the host organization's HR department and can be seen as the overall director of the internship program. The internship coordinator is usually responsible for overseeing the development and implementation of an internship program, overseeing and coordinating the program once it's up and running, assigning interns to various departments, and managing site supervisors. This individual also acts as the liaison between the company and the educational institution (the student's faculty sponsor, the school's career centre director, and/or career counselors).

In general, there are three aspects necessary for an internship to constitute a learning experience:

1. The internship is within the student's area of study; and they bring to the internship the knowledge they've acquired through their academic education.

2. The internship supervisor provides guidance, evaluation, and feedback to facilitate the learning process. (Evaluations and feedback, however, can be written or verbal.)

3. The student engages in ongoing contemplation of learning objectives throughout the course of the internship.

2.4 INTERNATIONAL INTERNSHIP: An International Development internship with Projects Abroad and gain skills that you will use for the rest of your career, regardless of what field you move into. As you get hands-on experience in the development field you'll learn about infrastructure and disaster management as well as aid and development in disadvantaged communities. You'll also gain a deeper understanding of the world and the complex processes that are involved in supporting people and places to grow and prosper. We currently have a number of International Development Projects, working to transform communities that need help. Your work could include creating campaigns, educating local communities, and facilitating existing projects. You'll work with local experts and Projects Abroad staff to better understand global development challenges and the work needed to overcome them. There are two main aims to this project: providing you with a practical, insightful work experience, while helping to address issues affecting development in Abroad (Developed Country). Many of the interns who join us are looking for hands-on experience in their field of study. We provide you with the opportunity to learn from skilled local professionals and gain first-hand insight into the issues facing. By sharing knowledge and experiences, you'll participate in valuable cross-cultural exchange. This will help prepare you for your future career. The goal of international development is to improve the wellbeing of local communities by working on sustainable solutions to their problems. On this internship, you can choose to focus on a range of different issues, from immigration to human rights. Working with local NGOs who have expert knowledge of the situation, you'll contribute towards their efforts in protecting and empowering vulnerable groups of people. Help to create long-term positive change in local communities on this internship, while gaining invaluable international development work experience in Mexico.

3. Business incubator: is a company that helps new and startup companies to develop by

providing services such as management training or office space. The National Business Incubation Association (NBIA) defines business incubators as a catalyst tool for either regional or national economic development. NBIA categorizes their members' incubators by the following five incubator types: academic institutions; non-profit development corporations; for profit property development ventures; venture capital firms, and combination of the above [12]. Most research and technology parks do not offer business assistance services, which are the hallmark of a business incubation program. However, many research and technology parks house incubation programs [3]. Incubators also differ from the U.S. Small Business Administration's Small Business Development Centers (and similar business support programs) in that they serve only selected clients. SBDCs are required by law to offer general business assistance to any company that contacts them for help [4-5]. Within European Union countries there are different EU and state funded programs that offer support in form of consulting, mentoring, prototype creation and other services and co-funding for them. Tec Hub is one of examples for IT companies and ideas [6]. In India, the business incubators are promoted in a varied fashion: as Technology Business Incubators (TBI) and as Startup Incubators -- the first deals with technology business (mostly, consultancy and promoting technology related businesses) and the later deals with promoting startups (with more emphasis on establishing new companies, scaling the businesses, prototyping, patenting, and so forth).

Types of services

Since startup companies lack many resources, experience and networks, incubators provide services which helps them get through initial hurdles in starting up a business. These hurdles include space, funding, legal, accounting, computer services and other prerequisites to running the business [17-20].

Among the most common incubator services are:

- Help with business basics
- Networking activities

- Marketing assistance
- Market Research
- Access to angel investors or venture capital
- Comprehensive business training programs
- Advisory boards and mentors
- Management team identification
- Help with business etiquette
- Technology commercialization assistance
- Intellectual property management

Types of Business Incubation :

There are a number of business incubators that have focused on particular industries or on a particular business model, earning them their own name.

This list is incomplete; you can help by expanding it.

- Virtual business incubator - online business incubator
- Kitchen incubator - a business incubator focused on the food industry
- Public incubator - a business incubator focused on the public good
- Seed accelerator - a business incubator focused on early startups

Corporate accelerator - a program of a larger company that acts akin to a seed accelerator

- Startup studio - a business incubator with interacting portfolio companies
- Technology Business Incubator - a business incubator based out academic institutions
- Hybrid Incubator - A business incubator that combines virtual incubator with on-premise activities

A startup is a young company founded by one or more entrepreneurs in order to develop a unique product or service and bring it to market. By its nature, the typical startup ends to be a shoestring operation, with initial funding from the founders or their families.

A startup venture could be defined as a new business that is in the initial stages of operation, beginning to grow and is typically financed by an individual or small group of individuals. It is a young entrepreneurial, scalable business model built on technology and innovation wherein the founders develop a product or service for which they foresee demand through disruption of existing or by creating entirely new markets. Startups[25-28] are nothing but an idea that manifests into a commercial undertaking.

Grant Thornton (2016) define startup business[26,28] as an organization which is

- a) Incorporated for three years or less
- a) At a funding stage of Series B or less (B Series means second round of funding)
- b) An entrepreneurial venture/a partnership or a temporary business organisation
- c) Engages in development, production or distribution of new products/services or processes
- d) Revenue of up to INR 25 cr.
- e) Not formed through splitting or restructuring
- f) Employing 50 people or less

Department of Industrial Policy and Promotion (DIPP) define a startup as an entity incorporated or registered in India with following parameters:

- Established not prior to seven years, (for Biotechnology Startups not prior to ten years)
- With annual turnover not exceeding INR 25Cr in any preceding financial year, and
- Working towards innovation, development or improvement of products or processes or services, •It is a scalable business model with a high potential of employment generation or wealth creation

It is to be noted that such entity is not formed by splitting up, or reconstruction, of a business already in existence. Also, an entity shall cease to be a startup if its turnover for the previous financial years has exceeded INR 25cr or it has completed 7 years (biotechnology startups 10 years) from the date of incorporation/registration('Startup India', 2017)

### **GOVERNMENT INITIATIVES**

Indian government is serious in promoting entrepreneurship at the startup level and has taken a number of initiatives to ensure appropriate support. In this aspect it is relevant to mention 'Make in India' campaign introduced in September'14 to attract foreign investments and encourage domestic companies to participate in the manufacturing sector. The government increased the foreign direct investment (FDI) limits for most of the sectors and strengthened intellectual property rights (IPRs) protection to instill confidence in the

startups. In order to make the country as number one destination for startups, Government of India (GoI) has introduced a new campaign called ‘Standup India’ in 2015 aimed at promoting entrepreneurship among women and to help startups with bank funding. Another commendable and far reaching initiative is ‘Digital India’ introduced in 2015 to ensure government services are made available to every citizen through online platform that aims to connect rural areas by developing their digital infrastructure which translates into a huge business opportunity for startups.

**THE STARTUP SCENARIO IN INDIA**

It is to be noted that every year more than 800 technology startups are being set up in India. By 2020, it is estimated that around 11,500 tech-startups are going to be established with employment potential of around 250,000 technical people (NASSCOM, 2015). It is admirable to note that India is amongst the top five countries in the world in terms of startups with 10,000+ led by US with 83,000+ comprising 43% tech-based firms with 9% managed by women entrepreneurs. The number of incubators also has crossed 100 in 2014-15 to give boost to the startup saga (Grant Thornton, 2015).Sector wise, the distribution of Indian businesses is

Table:1 Break-up of Indian Startup Businesses

Technology Based	Non-Technology Based
E-Commerce - 33%	Engineering- 17%
B2B - 24%	Construction-13%
Internet - 12%	Agri- products- 11%
Mobile apps - 10%	Textile - 8%
SaaS - 8%	Printing & packaging – 8%
Other – 13%	Transport & logistics- 6%
	Outsourcing & support -5%
	Others-32%

Source: Startups India- An Overview, Grant Thornton, 2015

**THE STARTUP ECOSYSTEM**

Along with government initiatives, there is a definite movement in startup arena in India due

to penetration of IT and internet. Many startups[30-34] are coming up in service sector including education, legal, retail, insurance and health. With customers becoming aware of the benefits and convenience, the popularity and viability of startups is no more a difficult proposition for an entrepreneur.

A number of venture capitalists and angel investors are aggressive and gung-ho on Indian startups as they see lot of potential with few expected to become unicorns (high valued companies) bringing in good returns. On the contrary, there are examples of few startups that failed and eventually closed their businesses due to various issues and challenges.

**ISSUES AND CHALLENGES OF STARTUPS**

A successful start-up cannot start a business just with passion and an idea. A high level of leadership skills with clear understanding of market, excellent communication skills, maturity to see things in right perspective along with the ability to take calculated risks are required on the part of the entrepreneur(Aggarwal,2017). Lack of awareness, multiple clearances, unorganised market, poor infrastructure in Tier 2 /3 cities, lack of mentoring , stringent exit policies, corruption/red tape, technological risk, regulatory obstacles and lack of reforms keeping pace with the fast evolving market changes are some of the challenges as per Rashmi Gupte, Principal (Legal) of Lightbox India Advisors Private Limited.

Some of the major issues and challenges are discussed below:

**Financial Resources**

Availability of finance is critical for the startups and is always a problem to get sufficient amounts (Mittal, 2014; Truong, 2016). A number of finance options ranging from family members, friends, loans, grants, angel funding, venture capitalists, crowdfunding etc are available. The requirement starts increasing as the business progresses. Scaling of business requires timely infusion of capital. Proper cash management is critical for the success of the startups (Skok, 2016;Pandita,2017).A recent

report paints a gloomy picture with 85% of new company's reportedly underfunded indicating potential failure (Iwasiuk, 2016).

#### Revenue Generation

Several startups fail due to poor revenue generation as the business grows. As the operations increase, expenses grow with reduced revenues forcing startups to concentrate on the funding aspect, thus, diluting the focus on the fundamentals of business. Hence, revenue generation is critical, warranting efficient management of burn rate which in common parlance is the rate at which startups spend money in the initial stages. The challenge is not to generate enough capital but also to expand and sustain the growth.

#### 1) Team Members

To find and hire the right kind of talent for the business with skills to match growing customer expectations are one of the biggest challenges (Truong, 2016). Apart from founder(s), startups normally start with a team consisting of trusted members with complementary skill sets. Usually, each member is specialized in a specific area of operations. Assembling a good team is the first major requirement, failure to have one sometimes could break the startup (Skok, 2016). According to a survey, 23 percent startups failed because members did not work as a team. Chirag Garg, CEO, HyperDell, feels that bringing in affordable talent at the right time is a challenge. As per Nitin Sharma, Principal & Founding member, Lightbox India Advisors Private Limited "Hiring and retaining high quality talent, especially in the areas of product and technology remains a key challenge" (Choudhary, 2015)

#### 2) Supporting Infrastructure

There are a number of support mechanisms that play a significant role in the lifecycle of startups which include incubators, science and technology parks, business development centers etc. Lack of access to such support mechanisms increases the risk of failure. 3) Creating Awareness in Markets

Startups fail due to lack of attention to limitations in the markets. The environment for a startup is usually more difficult than for an established firm due to uniqueness of the

product. The situation is more difficult for a new product as the startup has to build everything from scratch. 4) Exceed Customer Expectations

The next most important challenge is gauging the market need for the product, existing trends, etc. Innovation plays an important role, since, that the startup has to fine-tune the product offerings to suit the market demands (Skok, 2016). Also, the entrepreneur should have thorough domain knowledge to counter competition with appropriate strategies. Due to new technologies that are emerging, the challenge to provide over and above an earlier innovation is pertinent. Namrata Garg, Director, SendKardo feels that the biggest challenge is the need to constantly reinvent yourself and come up with a service to be able to match up customer expectations and exceed them.

#### 5) Tenacity of Founders

Founders of startups have to be tough when the going gets tough. The journey of starting a venture is fraught with delays, setbacks and problems without adequate solutions. The entrepreneur needs to be persistent, persuasive, and should never give up till he/she achieves desired results. History is replete with startups who gave up the fight when things went wrong. Sometimes the product could be ahead of its time or may require complimentary technology/products for the use by the customers. For example, Apple had to delay introduction of iTunes till the regulations favoured the launch. It is also relevant to quote Steve Jobs who by commenting "A lot of times, people don't know what they want until you show it to them" reiterates the fact those products from startups mostly fall in the "new and untried" category where the success rate is minimal.

#### 6) Regulations

Starting a business requires a number of permissions from government agencies. Although there is a perceptible change, it is still a challenge to register a company. Regulations pertaining to labor laws, intellectual property rights, dispute resolution etc. are rigorous in India which takes about 30 days to comply compared to just 9 days in OECD countries. Also, as per World Bank report, "World Bank Ease of Doing Business", India ranks 142 out of 189 economies (Mittal, 2014).



### 7) Growth Decelerators

Some of the agencies which are part of the startup ecosystem themselves can sometimes become hurdles in the growing stages. As per Sneha Bhavsar, co-founder and CEO, OoWomaniya one of the major issues is the influence of incubators, institutes and similar organisations which try to control, manage and be the daddies of the start-ups in the name of helping, mentoring etc (Choudhury,2015). This needs proper coordination among the organizations for mutual benefit.

8) Lack of Mentorship  
Milan Hoogan, Vice President -Sales and Marketing at Erfolg Life Sciences feels that lack of proper guidance and mentorship is one of the biggest problems that exist in the Indian startup ecosystem (Choudhury, 2015). Most of startups have brilliant ideas and/or products, but have little or no industry, business and market experience to get the products to the market. It is a proven example that a brilliant idea works only if executed promptly (Mittal,2014). Lack of adequate mentoring/guidance is the biggest challenge which could bring a potentially good idea to an end.

### 9) Lack of a Good Branding Strategy

Absence of an effective branding strategy is another issue that prevents startups from flourishing at a faster pace. Hemant Arora, Business Head-Branded Content, Times Network opines that branding demands paramount attention as it gives an identity and occupies a space in the consumer minds(Choudhury,2015).

10) Replicating Silicon Valley  
Koushik Shee, Founder and CEO, Effia, feels that Indian startups get influenced by Silicon Valley models which may not succeed in Indian scenario. Lot of tweaking and modifications could be required when transplanted into Indian markets keeping in mind Indian infrastructure in terms of roads, internet, electricity and telecom penetration (Choudhury,2015).

## 1. REASONS FOR FAILURE

As regards major reasons for failure of startups, a survey based on analysis of 101 firms showed that 42% failed as the product had no market, 29% firms ran out of cash, 23% did not have the right team, 18% closed due to pricing

issues, 17% firms had poor product, 14% failed due to poor marketing and 8% had no investor interest(Griffith,2014). These reasons substantiate most of the issues and challenges that have been enumerated above.

## GOVERNMENT INITIATIVES

There are numerous government and semi-governmental initiatives to assist startups.

### • Start-Up India

This initiative provides three-year tax and compliance breaks intended for cutting government regulations and red tapism.

### • MUDRA Yojna

Through this scheme, startups get loans from the banks to set up, grow and stabilize their businesses.

### • SETU (Self-Employment and Talent Utilization) Fund

Government has allotted Rs 1,000 Cr in order to create opportunities for self-employment and new jobs mainly in technology-driven domains.

### • E-Biz Portal

Government launched e-biz portal that integrates 14 regulatory permissions and licenses at one source to enable faster clearances and improve the ease of doing business in India.

### • Royalty Tax

Indian government has reduced the royalty tax paid by businesses and startup firms from 25 per cent to 10 per cent.

## CONCLUSIONS

In this paper we discussed about intership, innovation, incubation and startup with their types with national, international. Our proposed method describes the above parameters for technical institutions in India. The current economic scenario in India is on expansion mode. The Indian government is increasingly showing greater enthusiasm to increase the rate of growth from grass root levels with introduction of liberal policies and initiatives for entrepreneurs like 'Make in India', 'Startup India', MUDRA etc. 'Make in India' is great opportunity for the Indian start-ups. With government going full hog on developing entrepreneurs, it could arrest brain drain and provide an environment to improve availability of local talent for hiring by startup firms. In this

paper, as the part of higher education discussion about types of internship to educate the engineers to the suitable working environment in the institutions. Those students have participated interested to learn and digest working environment with academics. While in the internship period they have learned and getting the idea generation to produce the product outcome. Small contributions from a number of entrepreneurs would have cascading effect on the economy and employment generation which would complement medium and large industries efforts catapulting India into a fast growing economy. The startup arena has a lot of challenges ranging from finance to human resources and from launch to sustaining the growth with tenacity. Being a country with large population, the plethora of opportunities available are many for startups offering products and services ranging from food, retail, and hygiene to solar and IT applications for day to day problems which could be delivered at affordable prices. It is not out of place to mention that some of these startups would become unicorns and may become world renowned businesses by expanding into other developing and underdeveloped countries.

## REFERENCES

1. Brown, S., Bucklow, C., Clark, P., 2002. Professionalizing teaching: enhancing the status of teaching, improving the experience of learning and supporting innovation in higher education. *J. Geogr. High. Educ.* 26 (2), 159–168.
2. Amason, A. 1996. Distinguishing the effect of functional and dysfunctional conflict on strategic decision making: Resolving a Paradox for top management teams. *Academy of Management Journal*, 39 pp. 123-148.
3. Bichsel, J. 2012. Analytics in Higher Education: Benefits, Barriers, Progress, and Recommendations. [e-book] EDUCAUSE Center for Applied Research. Available at: <http://www.educause.edu/eca>.
4. Bohle Carbonell, K. et al. 2012. Unleashing the creative potential of faculty to create blended learning. *The Internet and Higher Education*.
5. Brennan, J. et al. 2013. Things we know and don't know about the Wider Benefits of Higher Education: A Review of the Recent Literature. BIS Research Paper Number 133.
6. Venkatesh, U., & Dutta, K. (2007). Balanced scorecard in managing higher education institutions: An India perspective. *International Journal of Educational Management*, 21(1), 54–67.
7. Vishnoi, A. (2013). Innovation Universities Bill Stuck, University Grants Commission Looks at Giving Funds to Existing Universities for Innovation, *The Indian Express*. Retrieved from <http://www.indianexpress.com/news/innovation-universities-bill-stuckuniversi/1068853/>.
8. Spady, William (1994). Outcome-Based Education: Critical Issues and Answers (PDF). Arlington Virginia: American Association of School Administrators. ISBN0876521839. Retrieved 31 October 2014.
9. Mohayidin, Mohd Ghazali (2008). "Implementation of Outcome-Based Education in Universiti Putra Malaysia: A Focus on Students' Learning Outcomes". *International Education Studies*. 1 (4). Retrieved 23 October 2014.
10. Kaliannan, Maniam; Chandran, Suseela Devi (2012). "Empowering Students through Outcome-Based Education (OBE)". *Research in Education*. 87 (1): 50–63.
11. Desai, S., & Kurkarni, V. (2008). Changing educational Inequalities in India in the context of affirmative action. *Demography*, 45(2), 245–270.
12. Dube, S. (1988). Higher education and social change. In A. Singh & G. Sharma (Eds.), *Higher education in India: The social context* (pp. 120–176). New Delhi: Konark.
13. Bloom, B. S. (1994). "Reflections on the development and use of the taxonomy". In Rehaag, Kenneth J.; Anderson, Lorin W., Sosniak, Lauren A. (eds.). *Bloom's taxonomy: A forty-year retrospective*. Yearbook of the National Society for the Study of Education. 93. Chicago: National Society for the Study of Education. ISSN1744-7984.
14. <http://www.kurwongbss.qld.edu.au/thinking/Bloom/blooms.htm>.
15. Anderson, Lorin W. & Krathwohl, David R. (2001). *A Taxonomy for Learning, Teaching and Assessing: a Revision of*

- Bloom's Taxonomy. New York. Longman Publishing.
16. Clark, Donald R. (1999). "Bloom's Taxonomy of Learning Domains". Retrieved 28 Jan 2014.
17. Hoy, Anita Woolfolk (2007). Educational psychology (10th ed.). Boston: Pearson/Allyn and Bacon. pp. 530–531, 545. ISBN0205459463.OCLC68694368.
18. Armstrong, Patricia. "Bloom's Taxonomy". Vanderbilt University Center for Teaching. Vanderbilt University. Retrieved 29 June 2016.
19. Harrow, Anita J. (1972). A taxonomy of the psychomotor domain: A guide for developing behavioral objectives. New York: David McKay Company.
20. Dave, R. H. (1975). Armstrong, R. J. (ed.). Developing and writing behavioral objectives. Tucson: Educational Innovators Press.
21. M. Yang, M. You and F. Chen "Competencies and qualifications for industrial design jobs: implications for design practice, education, and student career guidance" Design Studies, Vol. 26, Elsevier Ltd, UK, (2005), 155-189.
22. W. Lewis, and E. Bonollo, "An analysis of professional skills in design: implications for education and research", Design Studies, Vol. 23, Elsevier Ltd, UK, (2002), 385-406.
23. A. Salama, "A Voice for an alternative architectural education: integrating "What" and "How" knowledge" ARCHITTIMES, Karachi, Pakistan, September (2003).
24. Agarwal, P. (2009). Indian higher education: Envision the future. New Delhi: SAGE.
25. Brown, P., Lauder, H., & Ashton, D. (2010). The global auction—The broken promises of education, jobs, and incomes. Oxford: Oxford University Press.
26. Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). The new production of knowledge: The dynamics of science and research in contemporary societies. London: SAGE.
27. Government of India. (1958). Scientific policy resolution. In Government of India. Department of
28. Science and Technology (Ed.). New Delhi: Ministry of Science and Technology.
29. Government of India. (1983). Technology policy statement. In Department of Science & Technology (Ed.). New Delhi: Ministry of Science and Technology.
30. Government of India. (2003). Science and technology policy. In Department of Science & Technology (Ed.). New Delhi: Ministry of Science and Technology.
31. Government of India. (2012). Twelfth five year plan (2012–2017) social sectors. In Planning Commission (Ed.), (Vol. 3, p. 274). New Delhi: SAGE.
32. Government of India. (2013). Science, technology and Innovation policy. In Minister of Science & Technology (Ed.), (p. 22). New Delhi: Ministry of Science and Technology.
33. Bound, K., & Thornton, I. W. (2012). Our frugal future: Lessons from India's innovation system. London: NESTA.
34. Kaul, S. (2006). Higher Education in India: Seizing the Opportunity Working Paper Series (Vol. 179). New Delhi: Indian Council for Research on International Economic Relations.