J.B. Institute of Engineering & Technology

Strategic Plan (2018-23)

PROLOGUE

Throughout history, the greatness of a nation or a civilization is closely associated with the greatness of its system of education – especially, higher education. Great universities like Nalanda and Takshshila in ancient India contributed immensely to spreading our nation's reputation far and wide. Even in modern times, the name of the best universities in the world are a proud part of the global reputation of great nations and cities. The brand images of modern nations are largely dependent on higher education centers established in those countries.

Today India is emerging as a global power in the 21st century. Hyderabad is emerging as India's Innovation & Information Technology Capital. It is transforming itself in line with its aspiration to become a Global City.

Modern education sector is going through many reforms and challenges arising out of growing population, increasing automation, and economic slowdown. It is reducing job opportunities after undergraduate and graduate education. Institutions like JBIET have to devise strategies by designing curriculum with higher alignment to industry's requirements.

It demands entire new focus on strategy based on fresh SWOC analysis taking care of new challenges and opportunities. This strategic plan deals with the issues which JBIET is likely to face during 2018-2023 and presents a pathway to deal with such issues.

I am sure that with the active support of all the stake holders Management, Faculty members, Students, Parents, Alumni and Prevailing regulatory Setup, we shall overcome all the challenges and capitalize all the opportunities to climb the summit of success that is beckoning at us.

11th December 2017 **Principal JBIET**

SECTION -I

CONTEXT

ABOUT THE INSTITUTE

J.B. Institute of Engineering &Technology (JBIET)

1. Aim , Purpose and Establishment of JBIET

An Educational Institution is service to nation. J.B. Institute of Engineering & Technology (JBIET) was established in 1998 by J.B Educational Society to full fill the vision " **To be a center of academic excellence in engineering and management education, research and application of innovative methods to benefit the society with ethical values**" and the aim of the Education for everyone. JBIET is an UGC Autonomous Institution with NAAC accreditation. It is applying for NBA re-accreditation.

It was the dream of noted Philanthropist Shri. J. Bhaskar Rao Garu, the Founder Chairman of JBIET to provide affordable quality education. This dream is further nourished by current management team headed by Chairperson Mrs. J. Vasumathi Devi Garu and Ssecretary Mr. J. V. Krishna Rao Garu.

2. Infrastructure and Capacity

The Institute started in 1998 with an intake of 246 and four branches. It has grown now in an organization with **Eight** under graduate courses(ECE, EEE, CSE, IT, CIVIL, MECH , MINING and ECM), **Five** M.Tech. courses(CSE, VLSISD, CAD/CAM,SE and EPS) and a PG professional courses of MBA and MCA. In 2017-18 total UG Courses annual intake of JBIET is 780. Total PG courses annual intake was 96 and the annual intake in PG Professional courses MBA is 60, MCA is 60.

JBIET is part of 106 acre JB Campus. This campus is just outside the Mega city of Hyderabad in lush green surrounding in the vicinity of Gandipet lake. A contiguous piece of 25 acre land is exclusively earmarked and reserved for JBIET. It has clearly demarcated boundaries,

sports grounds, Hostel, In-campus Bank and post office, and Canteen. State of Art and completely free medical facility is provided to all JBIET employees and students by its sister concern Bhaskar Medical College and its 700 bedded Bhaskar General Hospital.

The Institute is having five separate blocks, housing 8 UG departments. All M.Tech courses are co-located with their UG departments but with separate exclusive infrastructure. Total carpet area of JBIET is 35825 Sq. Meter, which is more than the norms required by UGC/AICTE. In addition to these Education blocks, separate Blocks for Workshops, Life Skills labs, ICT Labs, Canteen, Basketball Court, Cricket/Football ground, Vehicle Parking space are provided. JBIET is on Hyderabad - Vikarabad main Highway. It ensures good connection of state transport buses from every part of the city. In addition to this JBIET operates 28 buses of its own for its students and faculties.

3. Teaching Learning Process at JBIET

JBIET has been giving excellent results, and pass percentages for final year students of different branches are in the range of 90-95%. A growing number of students are now appearing in state/central government competitive exams and getting successful.

JBIET has well established academic administration. It is headed by the Principal. A team of 11 HODs, 8 Deans and 5 Sectional Head Support the Principal. JBIET is having 186 faculty members, out of which 36 are having Ph.D qualification.

JBIET has implemented Choice Based Credit System and consciously aligned it syllabus to it as suggested by AICTE. In 2017 JBIET Established JB Skills Hub (A hub of Life Skills and Employability Skills Lab). It further implemented Outcome Based Education (OBE) system for both UG and PG courses.

4. Placement and Internship

JBIET is doing very well in the area of gainful employment. The word 'Gainful employment' here means students, placed by placement service of JBIET (in-campus or off campus placements), are added to the students pursuing master level course in India or abroad. Over 90% of eligible students get gainful employment in JBIET. In addition to this JBIET is having excellent track record for provision of internship. with over 85% students getting internship in various reputed organization via institutional efforts.

5. Co-curricular and Extracurricular Activities

JBIET Strictly follows policy of excellent Co-Curricular and Extracurricular activities for its students. On an average 16 Co. Curricular and 9 Extracurricular events are held every year with extensive student participation. There are 6, NGOs registered by JBIET students like, Rotaract Club JBIET, Nirrman, Street Cause along with NSS (National Social Scheme).

6. Social Outreach of JBIET

JBIET is committed in helping its surroundings. It has adopted neighboring villages of Yenkapally and Kanaka-mamidi. Primary School of Yenkapally was rebuilt by JBIET to help village student. It has repeatedly organized health campus and various social awareness events. It has trained local village youth in computers, basic mechanical and electrical repairs to enable them to get gainful employments.

7. Student Centric Approach at JBIET

JBIET takes pride in its student centric approach. It is having an inbuilt mechanism of remedial classes for academically slow learners and a strong Proctorial system in which every student is assigned to a Proctor for his/ her all round welfare. Students benefit from various student chapters of professional bodies like ISTE, IETE, CSI, IEEE, HMA, FATCCI, AIMA, ACM. There is a dedicated Student Activity Centre coordinating all students' co-curricular and extra- curricular activities. JBIET is having extensive resources for online learning outside its

classroom, like NPTEL and " Spoken Tutorial" programme of IIT Bombay. It is a nodal centre for Spoken Tutorial programme.

8. Library and Information Services

JBIET is having state of art library with over 86,000 volumes and State of the Digital Library created with support of TAPD grant. The library gets 127 Journals in addition to over 100 journal provided by DELNET. The Digital library of JBIET is having subscription of BLM, NPTEL and MIT contents. It is a life time member of National Digital Library (NDL).

9. Research at JBIET

JBIET is having strong tradition of research. It has received grants for research both from AICTE / UGC. JBIET academicians are consultants in Govt. Institution like BSNL, NIC and Doordarshan. Total 280 research papers get published from JBIET every year which is having average of little more than one paper per faculty every year. For doing advance research JBIET is having its own supercomputer based on Vidiakeplar implementation. JBIET faculty members are guiding 17 PhD students in various universities. JBIET is working in three key research areas. First one is "Non-Conventional Energy Resources". JBIET is having a Solar Power Lab and 100KW solar power plant. The second research area identified by JBIET is "Substitution of Plastic by bio-degradable composite materials. Third key area of research in JBIET is "Artificial Intelligence and Machine Learning". In addition to this good work is being done in the area of VLSI and Computational Mathematics.

In coming years JBIET will strive its best to serve the society in even better ways.

1. DEVELOPMENT OF INFRASTRUCTURE: VISION

WHAT IS A MASTER PLAN?

A campus master plan is a physical manifestation of a institute's strategic plan. At its best, it is a road map for the future of a campus, and becomes a crucial tool in confirming that short-term projects are working in conjunction with long-term plans and goals. Without it, each decision made about a campus' facilities from new buildings to renovations to infrastructure improvements is made in isolation, without a bigger vision in mind. And a good campus plan builds in flexibility, so that it can accommodate shifting academic priorities and economic conditions.

Three components coincide and work together to support the core mission and values of the university –**Landscape**, **Buildings** &**Connection**. Together, they ensure the largest of campuses feel humane and comfortable, have positive purpose and elucidate character.

Global, leading campuses employ such principles to ensure a wonderful "**learning**", rather than "**Teaching**" environment.

Key Features:

1. Sustainable Growth
2. Environment Centric
3. Clean and Green Campus
4. Reduction of Carbon Foot Print by Using Solar Energy
5. Inclusivity by Adding Support to Differently Abled.

Key Infrastructure Additions during this Strategic Plan (2018-23)

1. Boys Hostel
2. Extension of Library
3. Three Seminar Halls with capacity of 350, 200 and 150 respectively
4. Convertible open auditorium with capacity of 1000
5. Lifts in all academic and administration blocks

6. Wash rooms for Differently Abled.
7. Renovation and extension of Canteen Infrastructure
8. ICT enabled Classrooms
9. A new Computer Centre with a capacity of 100
10. Renovation of MNR indoor auditorium
11. Exclusive Placement seminar hall and interview rooms.
12. Life Skills laboratory
13. Additional Boys and Girls washrooms in First Year block
14. Landscaping
15. Connecting all building areas to Sewage Treatment Plant.
16. Creation of Rain water Harvesting pits.
17. Creation of Incubation and Innovation Centre

MASTERPLANNING PRINCIPLES:

Creating a Legible Campus

In campuses, legibility and way finding are major aspects of a successful master plan. It provides distinction, purpose and a clarity of vision in placing new buildings and enhancing value.

Creating a Contextual Campus

Such large development does not succeed as an island in isolation. Its edges and paths are derived from a larger geographical context, the needs of the neighborhood and the successful physical and ecological linkages formed.

Creating Memorable Landmarks

In a continuation of the legibility principle, creating memorable landmarks endears users to the project, provides sense of location and pride, while simultaneously endowing tremendous value to the landmark property and its vicinity.

Creating a GREEN Campus: Nestled in Nature

The idea is to covert JBIET as a **Campus in a Garden** by providing lungs of vegetation to sustain the environmental need of over 3000 humans.

Blending Modern Technology with Traditional Wisdom

Major aspects of Traditional Wisdom of creating education campus has been thoughtfully integrated into the planning so as to keep it beneficial for the success of the overall planning without being in conflict with other planning principles.

Walk able and intuitively Convenient

As spread out as the campus is, special efforts needs to be taken to ensure convenient, intuitive and comfortable connections to promote Non-Motorized transport, ensuring most conveniences are but a short walk away.

Environmentally Sustainable

Such a large development needs to be a beacon of sustainable planning, not just planning in nature, but planning with Nature.

Master Planning a True Green Campus

From Master planning to Architecture, the entire campus planning is being done keeping in mind to compliance of holistic sustainable planning.

Environmental Services:

- Waste Water Treatment
- Reuse of Treated Water
- Organic Waste Treatment
- Recycling of Dry Waste
- Solar PV Plant
- Rain Water Harvesting
- Low loss appliances

SECTION –II
ANALYSIS

SWOC (Strength, Weakness, Opportunity and Challenge) Analysis

At JBIET, SWOC analysis for this perspective Plan was carried out from 15th July 2017 to 31st August 2017, using internal resources and expertise.

SPACE for SWOC:

1. In alignment with Vision, Mission and long-term objectives.
2. In Compliance with Regulatory policies.
3. In compliance with legal and educational framework of Govt. of India.
4. In Compliance with legal and educational framework of Govt. of Telangana.
5. In compliance with overall framework of affiliating university JNTUH, Hyderabad.

Outcome of SWOC Analysis

Areas of activities identified by the institution are given below. These activities have emerged as Strategic Plan of the institution under various goals set to be achieved in next five years by the institution and have been included under eight Strategic Goals.

- Improvement in teaching, training, and learning facilities
- Modernization and strengthening of libraries and/ or increasing access to knowledge resources,
- Increased enrollment in existing PG programmes, starting new PG programmes, providing assistantships, and enhancement of Research and Consultancy Activities
- Faculty and staff development for improved competence based on Training Need Analysis (TNA)
- Enhanced Institute-Industry Interface
- Institutional management capacity enhancement
- Implementation of Institutional Reforms
- Academic support to weak students and
- Refurbishment (minor civil works)

STRATEGIC GOALS BASED ON SWOT AND ENVIRONMENT SCAN	
Goal 1	Support Weak Students (a) At Entry Level (b) SC/ST/OBC (c) Throughout 4 Years of study
Goal 2	Obtain Desired Autonomy and create effective Institutional Management Structures
Goal 3	Improve Teaching and Learning Processes that best reflect the current and future requirements of Engineering Profession at UG and PG levels.
Goal 4	Create Research and Innovation Culture at UG and PG levels and enhance activities related to R&D, Consultancy and Academic products
Goal 5	Nurturing PG students for Teaching Profession
Goal 6	Faculty and Staff Development for improved competence based on Training Need Analysis(TNA)
Goal 7	Enhance Industry Institute and Alumni Interaction
Goal 8	Introduce Academic and Non-Academic reforms(not covered above)
Goal 9	Establish Entrepreneurship & Information Processing Cell and Incubation Center Cell and will harbor for budding Entrepreneurs.

Financial Layout-Milestones to be Achieved						
Goals	Year-I	Year-II	Year-III	Year-IV	Year-V	Total
	(Rs. In Lakhs)					
Goal-1	5	3	4	4	3	**19**
Goal-2	0	17	17	17	17	**68**
Goal-3	165	154	184	198	220	**921**
Goal-4	16	29	51	84	127	**307**
Goal-5	14	27	27	27	29	**124**
Goal-6	For 18 Months					**173**
Goal-7	52	54	54	55	58	**273**
Goal-8	49	37	20	17	16	**139**
Goal-9	26	16	21	0	0	**63**
Grand Total						**2087**

Executive Analysis

- The institution has well developed infrastructural facilities, such as land, power, drinking water and adequate built up area to the academic, administrative needs, commensurate with the fast expanding academic frontiers. The institute is well equipped with laboratories, library and information center with digitalization and automation, DELNET & Online transaction facilities and all the central and physical, health-care, medical, transport, canteen, yoga, games, sports & gym facilities, besides the internet facilities. Seminar halls and conference halls, indoor auditorium, open air theater, Post Office and Banking facilities are available in the campus.

- The Institute is proud of having qualified, experienced, competent and adequate faculty and staff whose promising and laudable participation and involvement is oriented towards the cause of the corporate life of this institution as well as of the student-centric and learner friendly activities.

- The college has well developed Training and Placement Cell, Research and Development Cell, In-house Computer Maintenance Cell, Campus Maintenance Cell and a host of different committees for carrying out various student centric administrative and development activities. The concerted and coordinated efforts and services of the Heads of the Departments, functional Units and the Administration and other supporting staff in strengthening and streamlining general and academic administration do deserve to be highlighted.

- The institute enjoys a sound financial position with potential for mobilizing resources to carry forward its mission for positive growth and all-round development of the institute to produce globally competent techno professionals.

- The Institute has been sanctioned a fund of Rs. 18 Lakhs by Thomas Edison Program for E-Learning and Environmental Development(TPED) for establishing E-Library and Digital Library. All the JBIET buildings and classrooms have been networked with fiber-optic cable so that E-Library can be used in each classroom with internet and LCD projectors.

- The Institute is having NAAC with B Grade (II Cycle).

- The JBIET also served as study center by JNTUH to organize Correspondence-Cum-Contact (CCC) programmes in B.Tech courses in ECE, EEE, Mech and Civil Engineering (2009-2014).

The Institute has analyzed the current and latest status of the institution, its internal strengths and weaknesses and external opportunities and challenges, presented to it by its environment. The institute has now resolved to embark on an ambitious and achievable Strategic Plan that aims at an all round institutional development and to maintain and sustain the excellence of this institution, to have expansion in new directions and vistas and thereby confidently take hold of the opportunities, it perceives favorable.

JBIET has developed a Strategic Plan, while taking the right and appropriate cognizance and linking with environmental scan (vision of the nation, state and affiliating university) and also bench marking the performance of the institution with the nearby and reputed institutions and then organizing brain storming sessions, through series of dialogues, discussions with management, faculty, staff, students, alumni and industry. To achieve the fore mentioned strategic goals, specific strategic objectives and strategic actions have been evolved by the exercise of strategic planning. Key performance indicators are also set. Based on it year wise resource planning is developed for five years of the project period i.e. from 2018 to 2023.

Situational Analysis

The Global Scenario Impacting Engineering Education

One of the other major off shoots of globalization is rising prosperity and reach of world media even at all stratas of society, especially in middle class homes, which has created awareness and the demand for the latest technology among the consumers in every field, consequently forcing the industry to provide the latest. Thus, the need exists for skilled manpower to cater to the changing technological needs, notwithstanding the advent of multinationals in the country.

The new millennium has witnessed unprecedented challenges and opportunities for higher education, arising from the effect of globalization. The Globalization of Indian economy has not only opened wider options for the investment for the Indian industry but has brought in the realization that only the best can survive in the world market Consequently, the realization that quality in products and manpower is the key to success.

India and the Knowledge Economy

In the context of global economy, knowledge is increasingly recognized as the main force behind economic growth and development, coupled with information, communication revolution and the emergence of worldwide labour market. The Indian economy is helped greatly with

availability of strong workforce in Information Technology. IT being the key in today's technical world, the present situation has created much larger avenues of education and training.

The NASSCOM-McKinsey study in 1999 projected creation of a $70 billion IT industry, employing more than 2 million persons within ten years. The worldwide market for IT services is expected to exceed $900 billion by 2010. The growth of IT-enabled service businesses in India also indicates that potential of IT technology and knowledge-based industries extends far beyond the development of software and hardware (India Vision 2020 document). Thus IT services and management of all types of information will be a powerful engine of growth and job opportunities.

As per the World Development Report 1998/99 "today's most technologically advanced economies are truly knowledge-based, creating millions of knowledge-related jobs in an array of disciplines that have emerged overnight. (World Bank 1999c: 16). Knowledge is viewed as an opportunity for resolving social problems such as food security, health, water supply, energy, and environment and is seen as a possibility of leapfrogging selected areas of economic growth.

The investment in the knowledge base i.e. research and development, education, and computer software is equally or even exceeding investment in physical equipment. "Today, economic growth is as much a process of knowledge accumulation as of capital accumulation" (Constructing knowledge Societies: New Challenges for Tertiary Education – World Bank document 2002).

The Changing Role of Engineering Education in 21st Century

Technical education constitutes the foundation for development of science and technology. Though India is proud of high quality engineering graduates produced by IITs, the handful of these world class professionals is grossly inadequate.

Engineering Education System: Challenges

- **Faculty Shortage/ Up gradation**: The massive expansion of institutions has resulted in an estimated faculty shortage exceeding 30,000 PhD and 24,000 Master Degree level faculty in 2388 institutions with an enrollment capacity of about 8,41,018 as of 31st August 2015. PhD qualified faculty is becoming a scarcity.
- **Due to Archaic Recruitment and Promotion Procedures** the institutions are not able to attract and retain good quality faculty. Absence of incentives for quality performance, and non-existent faculty development policies in most institutions is aggravating the situation.
- Lack of Communication and Pedagogical Skills.

- **Lack of Industry-Academia Collaboration**: Due to distrust between the two partners; and both entities not being able to identify elements of win-win partnerships in terms of technical knowledge; and lack of incentives to institutions and faculty for collaboration.

- **Absence of Modern Teaching Aids & Infrastructure**: Obsolete learning infrastructure in terms of equipment, laboratories, and learning resources at the institutions are preventing the development of hands-on skills in industry-relevant technologies. There is also the absence of curriculum revisions that focus on practical training and quality instructions, research and development.

- **Absence of Research Culture:** Increasing research that caters to the emergent industry and societal demand for technological solutions results in directly and indirectly improving knowledge and quality of faculty, which in turn would benefit students. A growing number of Indian firms are keen to collaborate with academia to enhance their competitiveness. Active research programmes in engineering institutions would also make meaningful contribution for sustainable technological development in India.

- **Grooming Students to Become Teachers:** The attraction of students for a faculty position depends on salary package, perks/ facilities and professional career. Industrial sector salaries have increased significantly in the last few years but the increase in faculty salary with comparable experience has been marginal.

- **No Equilibrium** :While the number of Bachelors degree graduates in engineering (B.E/B.Tech) every year has increased exponentially from about 270 in 1947 to 2,37,000 in 2006 which is 12% as per compound annual growth rate (CAGR) stated in study report submitted by Energy Systems Engineering, IIT Bombay in the year 2007, the Masters' output has only increased from about 14,000 in 2001 to 20,000 in 2006, which is 7.5%, and the Doctoral output has increased by a mere 2.9% from 1985 to 2005 as per CAGR. The under production of Masters and Doctoral degree holders is now seen to be seriously undermining quality of education (due to high proportion of under qualified faculty).

As India strives to become a knowledge economy, the Report of the Committee on India Vision 2020 rightly recognized that a large number of the country's engineering colleges need to be up graded to quality standards close to those of the IITs, and given similar autonomy. Private sector initiatives and investment, Indian corporate or NRIs or reputed foreign universities, need to be fully encouraged. Close links need to be fostered between technical institutions and industry.

Though these realizations have now sunk in the NPE, as far back as 1986 (revised in 1992) had visualized the future of education system in the country and came up with some

revolutionary recommendations such as granting complete autonomy to the technical institutions to be able to bring in revisions and modifications quickly to the ever-changing need of the industry and to offer flexible/modular approaches to curriculum offerings.

Initiatives of GOI

Government of India has adopted the National Policy on Education (NPE-1986 as revised in 1992). The NPE has suggested some major steps to promote Efficiency and Effectiveness of engineering education such as giving high priority to modernization and removal of obsolescence to enhance functional efficiency, more effective procedures will be adopted in the recruitment of staff. Career opportunities, Service conditions, Consultancy norms and other perquisites will be improved. The teachers will be performing multiple roles apart from teaching. They will be involved in development of learning resource material, extension and managing the institution, mandatory in- service training for faculty members and Staff Development Programme will be integrated at the State, and coordinated at Regional and National levels All the institutions would be encouraged to generate resources using their capacities to provide services to the community and industry, facilities for sports, creative work and cultural activities to be expanded and Government of India will assist the State Governments for the development of Programmes of national importance.

During 1980s, an issue of revamping the Technician Education System in the country was felt by Government of India (GoI) and the State Governments. A need to make it demand-driven with relevant courses in new and emerging technologies, with adequate infrastructure resources, competent faculty and effective teaching-learning processes , was felt. Government of India supported the State Governments through three Technician Education Projects, financed by the World Bank during 1991-2007, helped to strengthen and upgrade the system and benefited 552 polytechnics in 25 States and Union Territories of Andaman & Nicobar and Pondicherry.

Present Employment Scenario & Future Trends

The World Bank estimates that India is well on the path of becoming the fourth largest economy in the world by 2020.

Countries like India are game for the ever changing technology and emerging global scenario, which as envisaged will result in opening up of greater opportunities and challenges for all developing countries. A study reveals that one of the most important factors is that India has the advantage of having largest growth of population in the age group of 15-64 at 747 million (2010) which is estimated to increase to 882 million by 2020 i.e. an increase from 60 to 66 per cent of the total population, it also faces the challenge of enriching their knowledge and skills through education and creating employment opportunities. Total work force in India has been about 375 million in 2002 and estimated to continue to expand over next two decades by about

2.0 per cent per annum. This means that India will need to generate about 9 to 10 million jobs a year i.e. 200 million additional employment opportunities by 2020.

The point to note is that even though India faces huge unemployment, it is also true that in the emerging global scenario there will be greater opportunities for countries like India with surplus well educated, highly skilled labour that can provide an attractive commercial environment for the outsourcing of manufacturing and service business.

Environmental Scan:

Environmental forces affecting almost all the Institutions in Telangana are as follows:

- The global recession and its impact on Indian economy
- India becoming signatory to WTO
- Growth in IT savvy population and IT industry in the State of Telangana and the current downturn in IT profession
- The various GOI schemes and initiatives for improving accessibility of school education in past decade created pressures on higher education system. Consequently, private enterprises were allowed enter into the arena of higher education resulting into enormous growth in number of private higher education institutions and increased competition and the challenges there to.
- Liberalized state government policies resulting in fee concessions for different strata of the society and delayed release of scholarship grants.
- Inordinately delayed admission process in respect of all the seats under convener quota (70%).
- The dynamic geopolitical environment which creates political, economic and social forces that influence the regional economy and outreach initiatives, out of state students and recruitment/retention of qualified faculty
- Changing Accreditation Criteria by NBA
- Change of affiliated process and grading system introduced by JNTUH.
- Mushroom growth of engineering institutions
- Increased competition among neighboring institutions for recruitment of best students and faculty
- Rapid pace of technological development and its' impact on college to stay updated in curricular offerings; resulting in industry entering into education domain to provide short industry driven certificate courses to make the engineering pass outs employable. If such

a scenario continues, degree awarding institutions as well as their degrees will lose their relevance.

- Growing need for continuing education programmes to meet the needs of working professionals due to rapidly changing technology; requiring engineering institutions to gear up to offering relevant quality oriented programmes on part time basis as well as through distance mode, through virtual classrooms.

Details of SWOC Analysis Conducted at JBIET :

The exercise of conducting SWOC was done to ensure unbiased and free discussions reliable results.

Procedure Adopted while Conducting the SWOC:

Breaking institutional stakeholders in following teams:

1. Principal
2. HODs/Deans
3. All Senior/mid level& Junior faculty members
4. Technical staff
5. Ministerial staff
6. Cleaners & Scavengers
7. 100 Students (undergraduate) in two batches
8. PG students
9. Alumni
10. Parents
11. Industry personnel

Group Process Technique for Brainstorming

Teams were set up with each of twelve groups listed above and separate brainstorming sessions were carried out with each group. If the group size was too large, they were divided in batches. Group of 5-6 sitting in round tables with flipcharts , pens and personal note pads

Methodology Adopted

Creating a Congenial Atmosphere for Free and Open Discussion

SWOC was conducted by facilitators and rapporteurs. The participants were informed the purpose of this exercise through dialogue on purpose of the exercise to create congenial atmosphere for free flow of information and sharing of views. They were educated on the significance of their participation in this exercise and how important it is for them to be candid, open and participatory.

Each group was informed that the initiative was taken by their management because it recognizes the contribution of each member of the institution and gives Weightage to their opinions and suggestions. It was stressed upon that their collective wisdom, contribution and involvement can only help institution grow and become quality yielding institution of world class caliber. In their commitment to develop the institution lies their own growth and progress.

Mode of Data Collection and Analysis:

Employees of JBIET were made to assemble in a large room with round tables and were further sub divided into small groups of 5-6 persons.

Each group was explained the following basic rules for brainstorming:

a. Respect each person's views and do not evaluate the idea and to refrain from being judgmental.

b. Since more & more views are welcome therefore limiting themselves is not required - Quantity is the goal.

c. The wilder the better.

d. Groups should record each idea verbatim.

e. Combining ideas is okay

The groups were asked to generate as many responses to the following questions within a limited time frame (10-20 minutes per question). All responses were recorded verbatim and ideas were not judged until evaluation time.

First Strengths and Weakness were taken up by facilitator asking the following questions

- What are the strengths of our institution, JBIET?
- What are the weaknesses of our institution, JBIET?

Strengths	Weaknesses
Advantages of proposition	Weak Processes and Systems Process and inadequate facilities
Capabilities Competitive advantages	Disadvantages in proposition Gaps in capabilities
USP's(Unique Selling Points) Resources, Assets, People	Lack of Competitive Strength Reputation, Presence and reach
Experience, knowledge, data Financial reserves, likely returns from fees and other sources	Own known vulnerabilities Financial situation, cash flow, cash-drain of the institution.

All ideas as generated by the groups were recorded verbatim.

After the time limit was up, all were listed and were categorized into thematic groupings.

Similar process was applied for seeking information on **Opportunities** and **Threats.** The facilitator began brainstorming by asking the following questions:

- What opportunities exist in our External Environment?
- What threats to the institution exist in our external environment?

Group reports were made and the result of SWOC was listed and analyzed. The list of strengths and weaknesses were reduced to five distinctive competencies and debilitating weaknesses since prioritization is the key factor in obtaining useful SWOC data, as the output from brainstorming were significant. Strengths prioritized were those that were distinctive competencies existing in the institution i.e. those few things that the institution does best that stakeholder really care about and that sets the JBIET apart from other Institutions. Core competencies attracted widespread agreement. The list of strengths prepared were those distinctive competencies, based on frequency tally of responses, on which the institution will focus on capitalizing for its further growth.

Weaknesses listed were those areas in which stakeholders expected and demanded performance or competency which the institution was lacking. Those weaknesses that attracted widespread agreement were listed based on frequency of responses. An organization will focus on correcting its debilitating weaknesses.

The next step was to reduce threats and opportunities to the five most critically important ones again based on frequency of responses of each.

Questions considered while evaluating SWOC were:

- What will JBIET gain if it does nothing? What will it lose?
- What will the institution gain if the institution starts a successful initiative? What will it lose if it does not?

Results of SWOC Analysis

STRENGTHS

The main identified current strengths of the institute, on which it can rely to pursue its further objectives include the following:

1. Good reputation and NBA accreditation; ranks amongst the 10 top institutions of the State.
2. Good Management that encourages Institutional development for both the academic and non academic systems.
3. Good transport facility.
4. Good “on” and "off” the campus student discipline
5. Healthy academic environment
6. Experienced and Qualified faculty
7. Well equipped Labs &Equipment
8. Large Campus with good civil infrastructure
9. Cordial student-teacher relationship
10. Supportive Management for Faculty Training & Development Programmes
11. Integrated Campus with multiple institutes offering multiple inter institutional activities.
12. Educational and Medical community services offered to local population
13. Campus Wi-Fi enabled
14. Canteen and hostel facilities
15. Good contact with the Alumni.
16. Digital Library and E-Learning Facilities in each classroom

WEAKNESSES

The areas that need improvement, as currently seen by the management, faculty, staff and students include the following:

1. Weak academic level of entry level students.
2. Faculty with Ph.D. qualification are few in numbers
3. Low faculty retention
4. Poor Industry-institute interaction.
5. Under utilization of lab and equipment resources
6. Poor motivation for faculty and technical staff
7. Low R & D activities.
8. Low focus on improving PG programmes.
9. No incentive for research and innovations.
10. Poor communication skills in some faculty
11. Weak faculty development of non-engineering subjects in Ist year syllabus.
12. Decision making centralized
13. Low entrepreneurial motivation for students.
14. Student placement poor because of recent recession

OPPORTUNITIES

The main identified opportunities resulting from the above assessments include the following:

1. Develop strong alumni base for better student placement.
2. Integrated Campus with multiple Institutes can provide for inter disciplinary research and other academic activities.
3. Undertake consultancy & sponsored research projects
4. Obtain Deemed University status
5. Participation /organizing Techno Fests/events

6. Collaboration with foreign universities for Student-Faculty exchange programme
7. Greater Institute-Industry tie up
8. To develop as a Training Placement Centre
9. Networking on library resource
10. Develop Industry related R & D
11. Develop entrepreneurial potential and establish Entrepreneurial Cell.
12. Increased guest lectures by industry and other academic experts
13. Introduce better teaching methodology & training systems
14. Develop better R & D and training related facilities
15. Increased Industrial Projects for enhanced Revenue generation
16. Render community service for the upliftment of the local people
17. Conduct workshops/conferences for better training & learning
18. Introduce latest technologies & innovations
19. Attract qualified & better faculty
20. Develop trained and qualified faculty as industry trainers.
21. Inherent geographical location of the Institute can bridge Urban-Rural divide using technological edge.(Engineering consultancy to local industry)

Opportunities	**Threats**
Good opportunities facing us	Political, Social Managerial obstacles
Competitors' vulnerabilities	Competitors intentions
Industry Trends that we are aware of	Environmental effects
Technology Development and Innovation	Changes in required specifications for services of the institution
Global influences	Declining supply of qualifies faculty
Growing sufficient demand	Loss of key staff
Increased attraction for qualified faculty	Declining quality of students

CHALLENGES

1. Decline in Training & Learning standards
2. Delayed fee reimbursement by the Govt.
3. Shortage and non-availability of experienced and qualified faculty
4. Multiple Govt. controls (regulating agencies).
5. Change in Management policies from educational focus
6. Growing student indiscipline in most of the institutions
7. Obsolescence of lab equipment & machinery
8. Low employability of pass out students due to recession
9. Likely entry of foreign universities
10. Unhealthy local politics (State separation issue)
11. Unequal competition with other new colleges
12. High attrition rate of the faculty
13. Economic recession

SECTION -III

WHERE WE WANT TO BE?

Where we want to be?

Alignment of the Institutional Vision with the Vision of the Country, State and Affiliating University

India Vision 2020

The GOI's vision for Technical Education is *"to develop and nurture a technical education system in the country which would produce skilled manpower of the highest quality, comparable to the very best in the World and in adequate numbers to meet the complex technological needs of the economy; and would provide the nation a comparative advantage in the creation and propagation of innovative technological solutions and in the development of a technological capacity of the highest order, both for its application in the economic development of the country and for becoming a major supplier of technology and technological services in the World."*

The Vision Statement has the following six main components:

1. To produce skilled manpower in sufficient numbers to meet the needs of the economy
2. To ensure the highest quality of output from the technical education system comparable to the very best in the world
3. To develop a comparative advantage in the creation and propagation of innovative technological solutions,
4. To develop national technological capacity of the highest order,
5. To use innovative technological solutions and technological capacity for economic development, and
6. To become a major supplier of technology and technological services in the world

(Source: Report of the Committee on India Vision 2020, December 2002)

MHRD's Mission on Higher Education

"To provide access to relevant and good quality higher education in an equitable manner through rapid expansion aiming inclusiveness, removal of regional, social and gender disparities in education".

Objectives

- To increase GER in higher education by 5 percent points by the end of the XI five year plan along with removal of regional, social and gender disparities.
- To ensure that nobody is denied professional education because he or she is poor
- To ensure reservations for OBCs in admission to Central Educational
- Institutions without adversely affecting the number of general category seats
- To ensure that minorities are not left out
- To increase women's participation in Education.

State Vision 2020 (Department of Higher Education)

The vision of the Government of Andhra Pradesh which was unchanged by Government of Telangana is to usher in a "Knowledge Society" by the year 2020. The State Higher Education System would emphasize on providing courses which lead to development of specialized and technical skills in the students, through professional courses in emerging areas such as Information & Communication Technology, Engineering, Bio-technology, Enviornmental Management, etc**."**

Vision of the Affiliating University

To ensure an enabling environment conducive to rapid growth, particularly by encouraging private investment. The core areas are:

- Increase in private investment in Technical Education
- Introduction of flexibility in choosing subjects of study
- Designing courses in tune with industry requirements
- Creating Centers of Excellence
- Education for poor
- Regulating Quality of Education imparted
- Transparency in Procedures of Admissions

The Institution's Vision and Mission and Core Values

Vision & Mission of JBIET

VISION

To be a centre of excellence in engineering and management education, research and application of knowledge to benefit society with blend of ethical values and global perception.

MISSION

1. To provide world class engineering education, encourage research and development.
2. To evolve innovative applications of technology and develop entrepreneurship.
3. To mould the students into socially responsible and capable leaders.

Core Values:

- To develop core competency amongst staff and students.
- To develop competency in areas relevant to the latest technology, state and national needs.
- To promote research with multi disciplinary /integrate approach, relevant to the industrial needs.
- To provide industrial / in-plant training to the students during vacation.
- To produce citizens having holistic approach and to become globally competent technocrats.

Mandates Impacting the College

- AICTE
- UGC
- Accreditation requirements of National Board of Accreditation (NBA)
- National Assessment and Accreditation Council(NAAC)
- Jawaharlal Nehru Technological University, Hyderabad
- Telangana State Commissionerate / Directorate of Technical Education, Hyderabad
- Telangana State Council for Higher Education,

Strategic Plans Specifics to Achieve Goals

The environmental scan, benchmark analysis and the SWOC analysis, has provided some major challenges and issues that our college faces which need to be tackled systematically hence creating this Strategic Plan document. The Strategic Plan 2018-2023 will address the following issues:

- How can we further expand our Mission to outreach rural population?
- How can our institution develop and acquire national level status as excellent quality education provider?
- How can our institution inculcate ethical values and environment consciousness among students?
- How do we adapt to rapidly changing technology and needs of industry?
- How to motivate our faculty and staff to upgrade their qualifications, knowledge and skills?
- How can we attract and retain research intensive and qualified faculty?
- How can we successfully transform faculty from teaching (primary engagement at present) into actively engaging in research and scholarly pursuit and become R&D hub for relevant industry?
- How can we inspire PG students to pursue Ph. D and adopt teaching as a career?
- What new academic programmes, both at UG and PG levels, should we offer and how the programmes should be delivered to best serve the current and future needs of stakeholders?
- How can we assist weak students at entry level to become strong in science, mathematics and communication skills (oral/written skills)?
- How can we attract high quality students?
- How can we take full advantage of our close location with Hyderabad and industrial hub?
- How can we become revenue generating institution that does not survive on student fee and funds from society only?
- How can we effectively market who we are, what we do and how do we benefit our local community?

Importance of the Strategic Plan

Strategic Planning determines Where the Institution is going over the next year or more, How it's going to get there, How will we know if it gets there or not and how will be the gap filled?

In the fast-changing technology, the needs of the industry have made it imperative for the educational institutions to function in a well planned manner to effectively utilize its optimum resources to prepare skilled manpower to cater to the industry requirements.

We recognize the fact that no plan is perfect and can accurately forecast the future, but we also recognize that if we fail to plan then we plan to fail. The Strategic Plan is a process to establish priorities on what we will accomplish in the future and forces us to make choices on what we will do and what we will not do. It pulls the entire institution together around a single game plan for execution. The process of preparation of Strategic Plan brings out the issues, strategic objectives and action plans to better anticipate, prepare and respond to future challenges and opportunities.

Considering the rapidly changing technology and consequently, the changing needs of the students and the industry, the Strategic Plan has to be flexible and dynamic to be able to adjust and adapt to the needs as they arise. Therefore, the Strategic Plan has been prepared for five year period i.e. 2018-2023. Based on the experience and lessons learnt during implementation of the Strategic Plan, the college will develop Strategic Plan for beyond five years period.

The Strategic Plan has evolved and finally designed through a series of dialogues, discussions, brainstorming sessions with every strata of the organizational hierarchy, involving everyone, the management, faculty, staff, students, alumni and industry.

The Team followed a process that led to consensus on 09 strategic Goals that the institution must address in order to realize the five year vision. Once the consensus was reached on the Mission, Vision, Core Values, the team brainstormed the strengths, weaknesses, opportunities and threats (SWOC) facing the institution that ultimately got translated into the 09 strategic Goals for JBIET institution.

The 09 Strategic Objectives were developed to address the strategic goals which motivate every stakeholder at the institution to look at the growth of the institution with a new prospective where everyone feels they have contributed to building and creating a better future for our students, faculty, staff and industry in a systematic planned approach. The strategic objective as summarized below guided in mapping and development of detailed action plans to achieve each strategic goal and ultimately to achieve the vision of quality.

In the whole exercise, we have tried to analyze where we are, what we want to be, how we will bridge the gaps and how we will monitor our progress and take corrective actions along with sharing responsibilities, guiding decision making at all levels with accountability.

While preparing the Strategic Plan we carried out the benchmarking exercise to determine where our institution stands in comparison to the neighboring institutions in the region and the state on various parameters

This Strategic plan is having 9 broad Goals. However, Goal No1, 2, 5 &9 are discussed in detail due to their immense importance to ultimate objectives of the Institution. Other Goals are discussed in brief as they are important but higher stress has been put on Goal No 1, 2, 5 & 9.

STRATEGIC GOAL–1

Support Weak Students

(a) At entry level,

(b) SC/ST/OBC and

(c) Throughout 4 years of study.

Preamble

At present the intake of students in each discipline is 60 and there are eight disciplines. Among eight, five are running with two sections. So, the total number of students admitted is 750. Here it is important to mention that students will be admitted through EAMCET(conducted by the State Government)as per the guidelines of university. Based on past results of the students in this institution the overall pass percentage is 55%. Generally the faculty helps the weak students by taking special classes/remedial classes/makeup classes/special tutorial classes on holidays and extra hours during the working days.

Strategic Objectives

1.1 Develop and conduct standard tests in science, mathematics and English to assess level of competency at entry level

1.2 Identify institution faculty, academically sound senior and PG students and or external support to help weak students, provide input to them on how to help improve weak students, what to teach and award them with teaching fellowships

1.3 Arrange extra coaching classes in morning / evening, or on holidays based on the assessment of standard tests for weak students

1.4 Develop formative assessment tests to (regularly) assess improvements in weak students

1.5 Introduce award/reward system for better performing weak students

1.6 Introduce award/reward for Senior or PG students on the basis of performance of their students.

1.7 Provide support to SC/ST/OBC students through above mechanism without charging extra to them.

1.8 Create Mechanism to support weak students throughout their study for 7 semesters

Strategic Actions

Strategic Objectives	Strategic Actions
1.1.1	Development of standards test in (i) Physics, (ii) Chemistry, (iii) Mathematics and (iv) English
1.1.2	Conduct the standard tests on the entry level students in the first week of their joining the institution.
1.1.3	Assess competency levels and decide the course of action for remaining strategic objectives for all four years of study i.e. taking care of weak students after first year in core areas (keep a record of how many weak students are helped that belong to disadvantaged groups i.e.SC/ST/OBC or BC) or women.
1.2.1	Identify teachers willing to support weak students during extra hours of the institution.
1.2.2	Identify academically sound good scoring senior students from seventh to eighth semester/PG students willing to accept teaching fellowships to support weak students during extra hours of the institution. Hostellers may be encouraged to take up such assignments.
1.2.3	If Internet sources are not sufficient, engage individual teachers from outside the institution on part time basis or invite a group having expertise in supporting weak students.
1.2.4	Through training provide input to identified faculty/senior students/ PG students on how to help students and motivate them to improve their performance.
1.2.5	Device a scheme to reward the teachers (Extra Remuneration) senior students (Teaching Fellowships)for external support- individual or agency appropriate remuneration to be fixed
1.3.1	Prepare a timetable for extra coaching classes in the morning/evening
1.3.2	Identify classrooms where extra classes will be held
1.3.3	Assign teaching loads to the faculty and senior students identified
1.3.4	Announce the weak students support schedule to all the students (Don't label weak students) Program should be announced for all interested students.
1.3.5	Maintain Attendance record, internal examination schedule and monitor performance of the students.
1.3.6	Counsel the weak students where necessary.

1.4.1	Develop formative evaluation test (to assess knowledge enhancement on continuous basis) for each subject separately.

Key Performance Indicators

- Improved performance of weak students in the knowledge of science, mathematics and language skills through internal tests – average percentage increased to 75% at the end of the first year
- The share of the first year students that complete the full first year and transitions successfully to second year (disaggregated by social group)
- Transitional rate of students from disadvantaged backgrounds from the first to the second year. Improved performance of weak students in the first semester University examination – average percentage in different subjects to improve to reach 65%
- Improved performance of weak students in the second semester University examination - average percentage in different subjects to improve to reach 75%
- Performance of weak students in second year – average percentage in different subjects to improve to reach 75% or above
- Improved performance of weak students in third year – average percentage in different subjects to improve to reach 75% or above
- Improved number of students completing degree in first attempt
- Average percentage of students completing degree in first attempt with overall grades to reach 75% or above

STRATEGIC GOAL–2:

Obtain Autonomy: Create Effective Institutional Management Structure

It is strongly felt that to meet the challenges faced by engineering education in the wake of fast changing technology, the institution must create a flexible mechanisms to be able to meet the changing needs of the technology and to be able to produce skilled engineers of global standards. In the competitive global scenario, the college recognizes the need to carve a niche for itself and create its' own USP which is possible when it has autonomy.

There are four types of autonomies i.e. managerial, administrative, financial and academic. The college being a private and self-sustaining, managerial, administrative and financial autonomy already exists to some extent, but they are to be understood and implemented in right perspective so that the concept of autonomy is inconsonance with the desired practices. It has to be recognized that the state of Telangana has created further financial constraints on engineering colleges by reimbursing tuition fee for the students. This fact provides benefits as well as constraints because, though the fee for each student is ensured, it is often delayed and the fee is very low compared to rest of the country. This provides the institution almost no financial autonomy. Therefore, the college plans to initiate number of revenue generating activities to augment its financial resources through strategic planning.

Strategic Objectives	Area	Strategic Actions
2.1	Managerial Autonomy	BOG will Constitute Committees, Sub Committees or Advisory Committees and also may empower the Principal/Director to do so. The BOG meets at least two times a year. Not less than 15 days notice shall be given of a meeting copy of the proceedings of each meeting shall be furnished.
		Have a Financial Autonomy with regard to Preparation, Sanctioning and Spending of Budget to achieve the Objectives of the Institution.
		Re-appropriate funds under certain circumstances out of allocated Budget
		Evolve proper set of Rules and Regulations-Prepare Rules and Regulations document and Approve by the BOG, Copy Kept in the Library and on Website
		Delegate the Financial Powers to various levels of Functionaries.

		Delegate powers to faculty to undertake R&D projects, Consultancies, CEP, Conferences/Seminars etc.
2.2	Administrative Autonomy	Director/Principal to report all important actions taken to BOG regarding: CEP, Consultancy, Staff Development, Seminar, Conferences etc. Principal to report all important actions regarding CEP, Consultancy, Staff Development, Seminar, Conferences to BOG
		On recommendation of HOD approve deputation of faculty for Seminar, Conferences, and Trainings. To lay down the Duties and Conditions of service of the Professors, Associate Professors, Assistant Professors and other staff maintained by the Institute, in consultation with the Academic Advisory Board.
		Director to delegate some of his//her powers to Deans, HODs and Professors. To regulate and enforce discipline among the employees of the Institute and to take appropriate Disciplinary action, wherever necessary.
2.3	Financial Autonomy	Principal Financial power for procurement up to Rs.2 Lakh. Expenditure through imprest with maximum rotational imprest limit of Rs. 50,000 to do all petty expenses and minor repairs.
		Academic HODs Expenditure through imprest with maximum rotational imprest limit of Rs. 10,000 to do all petty expenses and minor repairs. Delegate Powers to faculty to undertake R&D Projects, Consultancies, Conferences and Seminars. Depute faculty for Seminars, Conferences and Trainings(Budget Refer to Goal 6)
		Functional Heads Expenditure through imprest with maximum rotational imprest limit of Rs. 5,000 to do all petty expenses and minor repairs.

Key Performance Indicators

- Improved satisfaction level of Faculty, students and industry
- Number of new courses at UG/PG level introduced
- Number of programmes revised
- Number of Programmes restructured
- Number of Programmes phased out
- Number of value addition courses offered and beneficiaries

STRATEGIC GOAL– 3

Improve Teaching, Training and Learning processes and Facilities that Best Reflect the Current and Future Requirements of Engineering Profession at UG and PG levels

Preamble

Presently our institution is offering 8 UG programmes (Civil Engineering, Electrical & Electronics Engineering, Mechanical Engineering, Electronics & Communication Engineering, Computer Science Engineering, Information Technology, Mining Engineering and Electronics and Computer Engineering) and 5 PG programmes (Electrical Power Systems, VLSI System Design, CAD/CAM, Computer Science Engineering. Structural Engineering) with a total approved intake of 876.

In the first year students undergo training in basic sciences, mathematics and programming languages. The core engineering subjects are taught from the second year onwards. The evaluation is done as per the university guidelines by conducting objective and subjective examinations. The students who are not performing well are identified and special tutorial classes are arranged on weekends.

From the information collected through various agencies and organizations, it was noted that only 10% of the students who passed out are employable and the remaining 90% need some industry specific training hence it is decided to introduce some value added courses in each discipline to meet this objective.

CSE&IT: Providing a workshop/training on the following technologies

1. Microsoft's Technologies
2. Linux/Unix
3. Networking Protocols
4. Cloud Computing
5. Data Warehousing
6. Machine Learning & Data Science

ECE & EEE: Providing training in the following areas

1. Wireless Communication & Networking
2. Embedded Systems
3. Advanced Simulation Software

4. Internet of Things

MECH & CIVIL: Providing training in the following areas

1. Training related to CAD/CAM Software
2. Structure Health Monitoring

STRATEGIC GOAL – 4

Create Research and Innovation Culture at both UG / PG levels, Enhance Activities Related to R&D, Consultancy and Academic Product Preparation and participation

Preamble

In the techno world of today research is the key word. In fact teaching & research are the two sides of the same coin. Research is a form of teaching learning process. For effective teaching to be accomplished there must be active research activity.

JBIET also understands that the growth of the Institute is based on its R & D input. Since the campus is an integrated one, it offers ample opportunities for the multi disciplinary research. The Institute plans to utilize all the opportunities to initiate collaborative research projects involving rural communities and link it up with urban areas.

Existing Research & Development Centre:

Vision:

- To facilitate transformation of the students into good human beings, responsible citizens and competent professionals.

Mission:

- Impart quality education to meet the needs of the profession and society, and achieve excellence in teaching- learning and research.
- Practice and promote the high standards of the professional ethics, transparency and accountability.

Objective:

- Research and development at J. B. Institute of Engineering College aims to promote technical ideas in the global market in such a way that the graduate students are able to handle any type of instantly faced problems on their ways to get into the professional fields. Keeping this mind, Research and Development constantly provides many opportunities to touch the difficulties, and need of the people and environment by visiting both the teaching faculties and all students. Beside these, affordable education tours are provided frequently in order to upgrade the students' technical minds.

The Research projects are being implemented by the professors of the various disciplines to keep in tune with the developments in the various fields of Cluster Computing, Parallel Computing, Radar Signal Processing

- Computational Biology, Nano-biotechnology, Bioinstrumentation, biosensors
- Rational Drug Design
- Newer Imaging Techniques
- Advanced Materials
- Catalysis
- Computing
- Manufacturing and Technology Management
- Structural Engineering, Structural and Numerical Mechanics, Structural Health Monitoring
- Polymer Composites
- Space Geodesy, Geo-informatics
- Information Technology, Telecommunication

Focus of Research:

- Semantic Web.
- Machine Learning.
- Biodegradable Plastic Replacements

Interdepartmental/Multidisciplinary:

Enhancing research excellence through interdisciplinary, collaboration, and partnership is a key component of our Strategic Research Plan. Our goals are to create the following:

a) A better environment for interdisciplinary inquiry and research innovation.

b) Stronger research links and collaborations with other universities within the state, across the country and around the world.

c) Stronger links and interaction between research and education.

d) Sustainable and productive partnerships with governments, funding agencies and industry.

e) Increased levels of external research funding.

f) Increase in the transfer of product oriented (commercializable) research into commercialization opportunities.

g) Activities that increase opportunities for university research to have meaningful impact on community and social development.

Consultancy at JBIET:

Over the years, industrial consultancy has grown significantly indicating the industry's need for R&D support of our Institute. At the same time it underscores the Institute's appreciation of tackling live problems of industrial relevance. In short, it is a mutually beneficial association. Various types of consultancies are undertaken by the Institute.

JBIET interacts with the Industry mainly through:

- Technology Assessment / Management, Project Assessment
- Product / Process Design / Development
- Simulation / Modeling / Optimization
- Software Development
- Retainer ship of faculty in Advisory Capacity over specified periods/ Troubleshooting / Testing.

Undergraduate & Post-Graduate Research Apprenticeship Program (UPRAP)

The Undergraduate Research Apprenticeship program (UPRAP) is introduced to attract undergraduate students towards engineering research. Specifically, UPRAP provides Engineering and Technology students an opportunity to closely work with CEET faculty on exciting research projects so as to expand their domain of knowledge and skills. Students are encouraged to effectively utilize UPRAP in an attempt to synthesize an early roadmap towards their graduate research through the GATE's integrated B.Tech-M.Tech program. Further information on UPRAP can be obtained by contacting the department faculty adviser, or chair, or the Dean Academics office.

Our scientific quality will be developed via basic research and more excellent researchers.

Strategic Objectives

4.1 Create fully equipped research centers/laboratory with latest software and hardware to facilitate research in emerging technologies and encourage interdisciplinary research.

4.2 Make budgetary allocation in each departmental for research activities, and start generating revenue for self sustenance.

4.3 Appoint prominent researchers as Mentors (retired professors from IITs, NITs, IISc, other reputed agencies at national and state levels) to guide faculty in preparing wining proposals and gaining sponsored research, consultancies and projects from Government and private agencies thereby enhancing sponsored research, publications, live consultancies/projects from industry and developing patents

4.4 Hire faculty in selected research curricular requirements areas in order to develop selective areas of excellence

4.5 Initiate undergraduate research orientation program for students.

4.6 Initiate incentive and reward system for publication, organization and participation in seminars, conferences and substantial rewards for developing patents

4.7 Initiate system of revenue generation and sharing revenue with faculty, staff and students.

Key Performance Indicators

- Total research intensive faculty recruited
- Total research papers published per year by faculty
- Total number of multidisciplinary research projects taken up
- Number of sponsored research obtained
- Number of consultancies taken
- Number of live projects
- Number paper presentation
- Number of patents
- Total amount of funds generated

STRATEGIC GOAL NO. – 5

Nurturing PG Students for Teaching Profession

PREAMBLE

IT sector and other industries are prone to recession compared to the teaching field which is less prone to recession; however it is not very attractive either in terms of monetary benefits or in terms of career options.

An observation often pointed out by the Technical Educational Boards at both national and state level is "Shortage of Faculty Members". A step towards solving this pressing problem faced by a majority of institutions at both national and state level is, creating an environmental academic background at both UG and PG level that not only encourages but also nurtures the students at both UG and PG levels to look forward to consider and take up teaching profession as an equally challenging and lucrative career option.

Strategic Objectives

5.1 To provide 10% students the option to opt for **TAP Scheme (Teaching Assistant Program)** in various disciplines where this specific percentage of students will shoulder an additional responsibility of working as teaching assistants.

5.2 An approximately 10-15% of TIB (Total Institutional Budget) would be spent on providing teaching and research assistance / guidance where in the selected students will engage 6-8 hours per week in research / teaching / assisting senior faculty for class preparation activities.

5.3 Specific skill development training should be taken up on an intermittent basis in collaboration with governing bodies viz AICTE, UGC and NITTTR etc, so as to enhance the illustrative skills as well as provide a holistic view of teaching methodologies to the students.

5.4 Regular evaluation to be carried out so as to monitor the efficiency in teaching by senior faculty.

trategic Objectives	**Strategic Action Plan**
5.1.1	A pilot survey can be conducted to know how many students at UG/PG levels would be interested for enrolling under **TAP**(Teaching Assistance Program)
5.1.2	Students can be attracted by additional budget provision to be given in the form of monthly stipend

5.1.3	**TAP** scheme should be included when advertising notification for PG courses
5.2.1	To conduct an eligibility test as a selection criteria to be considered for scholarship/special grant under **TAP**.
5.2.2	New Bridge courses should be introduces at PG level so as to streamline the gap between Academic and Industry viz: Business presentation, Computational Fluid Dynamics(CFD), Nano Technology, Mechatronics and Power Electronics
5.2.3	An amount of Rs. 8000/- is proposed for each student enrolling **TAP**.
5.2.4	Students can take up a maximum of 2 Hrs/day for UG classes or may help/ assist senior faculty members in class preparation work.
5.2.5	Students availing **TAP** would have to execute a bond to render their services to the institute for a minimum period of 3 years on completion of course.
5.3.1	Institutional collaboration proposals should be made in order to provide guidance assistance, support, Aid etc. to the **TAP** enrollments with a view of specific skill development in the area of Teaching/Research
5.3.2	Students under **TAP** can be encouraged by deputing to participate in various National/International technical seminars, workshops and trainings
5.4.1	Students' feedback should be taken at regular intervals followed by performance counseling for the **TAP** enrollments.

STRATEGIC GOAL – 6

Faculty and Staff Development for Improved Competence Based on Training Need Analysis (TNA).

Preamble

JBIET has placed considerable importance on imparting effective and regular trainings for all the teaching and non teaching staff of the institution. The underlying idea was always to develop a right kind of attitude and a sense of integrity and commitment. It is also realized that the trainings for all the staff should be a regular feature so that the staff grows and with this the Institution grows. Management is keen to improve the competencies of all the staff members, especially the teaching fraternity. The TNA results show that a wide range of training areas is available for which the staff should be motivated to take up the trainings. It could be a long term or short term training, in small batches so that teaching schedule is not affected. Though in the past years some trainings were provided but now its been realized that a conscious policy for the training of human resource would enable the Institute to meet the challenges.

Since the technological knowledge is not only fast growing but rapidly changing. the knowledge becomes obsolete if it is not up graded regularly. Though in the past years some efforts were made in this area but they are not enough. A conscious policy for the training of human resources should become a permanent feature so that challenges faced by technocrats be met.

Strategic Objectives

The purpose of a training plan is to identify the work to be carried out to achieve the objectives.

6.1 Pedagogy Training for Faculty,

6.2 Training of Technical Staff in their relevant fields.

6.3 Upgrade qualifications of existing faculty and staff

6.4 Research competence & subject knowledge enhancement

6.5 Participation of Faculty in Work shops, Symposiums, Seminars, Conference on national & International level.

6.6 Evolve and design transparent norms for facilitating traching/non teaching staff to undertake various trainings

Strategic Actions

The need for Pedagogical Training using the latest teaching methodologies is the need of the hour. It has been realized that teaching fraternity is not keen to under go any such skill enhancement training. Therefore, efforts should be made from the management side to motivate them and facilitate them to go for the trainings. Regular feedbacks from the students could highlight the areas where training is essential like, enhancement of communication skills, use of modern teaching aids, designing the course files etc.

- To organize regular Training on Teaching Skills i.e, Pedagogy Training for all the faculty, basic and advance for lecturers, HODs, Deans etc.

STRATEGIC GOAL - 7

Enhance Industry Institute and Alumni Interaction

Preamble

A research cell is already established, where in we have Professors who are experts in various engineering branches like Electrical, Electronics, Computers, Mechanical Engineering, Biotechnology, Mathematics and Basic Sciences, who will be in continuous contact with some industries in and around Hyderabad. Last year the College received a grant of 13 Lakhs for two projects in the area of Electronics. Similarly Computer Science has been sanctioned with three research projects from Doordarshan, A.I.C.T.E and U.K Educational grant. Also our faculty is in contact with various industries for conducting combined research activities. One such industry is CNC Techniques, Hyderabad, where our staff members are working on innovative projects.

Professors of our College have expertise in below mentioned areas:

1. VLSI and Embedded system
2. Parallel Computing
3. Composite materials
4. Finite Element Analysis

As our Educational Society is running Medical, Pharmacy and Engineering courses, we are capable of involving into multi disciplinary research areas where Mechanical, Instrumentation, Pharmacy and Medical/Biomedical fields are involved.

In order to promote research activities in the College, amongst the staff members, the management is encouraging researchers by providing them with appraisals in various forms. Soon the same procedure will be applied and adopted for those staff members who involve in project consultancy. Various methods of merit recognition, fiscal and career incentives are planned and will be implemented. PG students and staff will be working under the guidelines of senior faculty working in research and innovation center.

There is a mechanism existing in the College, which takes care of Alumni Association activities like, Alumni data collection, arrangement of Alumni meetings. In order to get more out of the same, we have planned to arrange, identify some Alumni members, for Alumni interaction with students, which provides better ideas about job market, working environment, job opportunities and moral support to the budding engineers studying in III & IV years. The advantage of Alumni guidance to the presently studying students is identified and will be encouraged.

Strategic Objectives	Strategic Actions
7.1.1	Training & Placement office will be the core staff, should include a coordinator, not less than a Reader/Sr. Professor from the Institution who will be assisted by a Project Assistant and an office Assistant. The cell should meet minimum twice per semester and on the need basis. The proposed composition of the cell is as following: 1. Director/Principal-Chairman 2. HOD & One faculty from each department-Member 3. Members from the Industry/ Entrepreneur- Member 4. TPO- Member 5. Coordinator of the cell- Convener
7.1.2	The cell will design the road map for interaction with industry based on the strengths of the institution to include following activities annually 1. To identify and Facilitate at least 10 Guest lectures, Organize 2 Interactive workshops, 2 Conferences, 2 Seminars, 1 Brain Storming Sessions, 1 Technical Discussions with participation of Industry, Outside experts and eminent Personalities. 2. Conduct 8 Industrial Training /Industrial visits to benefit at least 1000 students and 100 faculty 3. Facilitate 6 Joint research work, 3 Consultancy involving, 8 Faculty and 32 Students. 4. Organize one Industrial Exhibitions at the institution premises who highlight research facilities and expertise available with the Institution 5. Invite at least ten professionals from the industry as visiting faculty in the Institution. 6. Organize 2 short/long term Industrial Trainings to benefit atleast 20 faculty members or work on projects in Industry. 7. Organize Campus placement fairs to ensure increase 10% placement of students every year. 8. Conduct tracer study on pass out students to know progress. 9. Organize Alumni meet once a year. 10. Invite at least 8 Alumni for interaction with students and create role models. 11. Seek Assistance from Alumni for Student Placements. 12. Invite at least two self-employed Alumni for Lectures and Guidance. 13. There are possibilities of losing contact with old Alumni members who shift from one place to another. In order to maintain contact with such people, maintenance of social communities like LinkedIn, Facebook are best suited solutions.
7.2	At least Three officials from Industry will be members of the BOG At least five Industry will participate in Curriculum Revision and Modification At least Two Industry will participate in evaluation of students performance

	Ten Industry professionals will be invited for expert lectures Six HR Professional will be Invited for placements assistance to students
7.3	1. Design and offer one continuing education programs to benefit at least Ten working professionals subject to regulatory approval. 2. Promote revenue generating activities such as testing, calibration, Consultation and R &D and Generate at least Rs.50,00,000/- as revenue for the Institution.

Expert Staff members with Industrial back ground Old Alumni members, who are not in contact since many days, has to be contacted.

Since the College is established in Hyderabad, which is an Industrial hub and IT Hub of South India, we have plenty of opportunities to contact and establish relationships with Industries, there by actively involving in industrial related activities.

Strategic Objectives

7.1 Reconstitute existing Training & Placement Office to an integrated office of Industry and Student Placement Services.

7.2 Ensure Participation and active involvement of industry in BOG, Academic Council, Boards of Studies, Faculty Recruitment and various expert Committees formed from time to time

Provide opportunities for lifelong learning and professional development to offer collaboratively designed Continuing Education Programmes (CEP) for working professionals sponsored by industry.

STRATEGIC GOAL -8

Introduce Academic & Non-Academic reforms

Preamble

The Institute is highly focused on the development of Human Resources, converting them into Intellectual capital by motivating them to start and participate in Revenue Generating Technological Courses/Activities

At present, the curriculum is considered to be more or less conventional method of teaching and learning is merely a supply type of activity. After L.P.G(liberalization, Privatization and Globalization),Industries are looking for industry ready professionals with modern think tanks, innovators, problem solvers and out of box thinkers**,** hence we need to adopt industry oriented teaching with best practices to bridge the gap between industry and institution.

Our future engineering graduates will enter into a world marked by rapid and global changes. Distance, time, and geography are developing new meaning as a result of advances in information and computer technologies and the establishment of global partnerships and alliances that provide mechanisms for collaborations that cross disciplines, institutions, states, and countries. Engineering graduates need to be significantly better prepared to deal with information retrieval, integrating knowledge, and synthesis. They must be able to take a holistic approach to problems involving complex and ambiguous systems and scenarios and employ creative and critical thinking skills. In an increasingly global marketplace, our graduates are and will be expected to work on multinational teams, have a global perspective, and be culturally and linguistically literate. They must possess communication skills to interact effectively in the community and within the professional and political arenas. Today's ethical issues will assume global proportions and our graduates must have the strong ethical foundation they will need to deal with issues involving equitable distribution of resources, byproducts of design, proprietary information, sustainable development, environmental conservation, genetic engineering, and human cloning. They need to be familiar with legal and business aspects of engineering solutions and their social impact and have a foundation in best business practices and fundamentals of entrepreneurship.

Strategic Objectives

8.1 Curricular Reforms

8.2 Establishment of 4 funds (1) Corpus fund (2) faculty Development Fund (3) Equipment Replacement Fund (4) Maintenance Funds

8.3 Generation, Retention and Utilization of Revenue generated through variety of activities

8.4 Filling up all existing teaching and staff vacancies

8.5 Improved students' performance evaluation

8.6 Performance appraisal of faculty by students

8.7 Faculty incentive for **Continuing Education** CE, Consultancy and R&D

8.8 Improved Sports, Games & Cultural Activities.

Strategic Actions

Key Performance Indicators:

(Covered under other Strategic Goals)

- Creation of four funds and fund accumulation therein to the extent of 0.5% (total 2%) of annual total recurring expenditure of the institution
- Amount of contribution made by the institution to Corpus fund
- Amount of **Internal Revenue** (IR) generated Rs. 281.1 Lakhs and utilized.
- Number of faculty and staff positions filled
- Availability of system of appraisal of faculty performance by students and faculty counseling
- Number of CE, Consultancy, R&D.
- Amount of incentives provided to faculty for CE, Consultancy, R&D.

STRATEGIC GOAL 9

Establish Entrepreneurship & Information Processing Cell and Incubation Centre Cell which will harbor for budding entrepreneurs

Preamble:

The JNTUH makes it mandatory for all its affiliated colleges to have an Entrepreneur Development Cell which will provide guidance on functioning of the cell. There are a number of benefits for establishing this cell in the institute. It makes the budding engineers to think on positive lines, generate new ideas, have analytical thinking and to become decision makers. It creates Self Employment opportunities for young Engineers.

Strategic Objectives:

9.1 Establish Entrepreneur Development Cell.

9.2 Establish Business Information Process Cell.

9.3 Establish Incubation Cells.

Strategic Activities:

Strategic Objectives	Strategic Actions
9.1.1	A fully fledged Entrepreneur Development Cell headed by a senior faculty will be created.
9.1.2	The cell will identify budding entrepreneurs out of the students in third and fourth year of Under Graduation and provide them basic facilities to start their business activities
9.2.1	The Institution will create Business Information Process Cell which will be headed by senior faculty. The responsibility of the cell will be to work in active collaboration with industry for the benefit of the institution, Create Industry Patrons, Industry sponsored gifts and to serve as guide for budding entrepreneurs. The functions of the cell will strive:

	1. To provide Information& Services to budding technology entrepreneurs. 2. To create Entrepreneurial culture in the institution 3. To promote Development of Technology based enterprises and promote self employment opportunities. 4. To respond to the emerging challenges and opportunities both at National & International level to small and medium enterprises. 5. Promote R&D, Consultancy, Project facilities and incentives provided by the college to attract industry and faculty. 6. Support / financial assistance from financial Institutions/Banks 7. Support of National Institute of micro, small & medium enterprises (Ni-MSME) for promotion of Small Scale Industries. 8. Government Policies, Subsidies/Licensing schemes for promoting Small Scale Industries. 9. Scope of Enterprises in different Engg. Streams. 10. Suggestions/advices to become an entrepreneur from technocrats turned to industrialists. 11. To extend necessary guidance to the prospective entrepreneurs in obtaining approval and execution of their projects. 12. To provide information on incentives/tax benefits of the state government to young entrepreneurs & developers of new technologies.

Key performance Indicators

- Number of programmes conducted with beneficiaries
- Number of Students taking up entrepreneurship
- Number of Students interested in Incubation Center
- Number of activities organized under BIPC
- Number of Industries Benefited
- Number of Industry Patrons Created

Monitoring, Feedback, Evaluation and Corrective Action Plan

While the Director/Principal is the overall responsible for implementation of the Strategic Plan, he/she will be assisted by the Implementing and Evaluation Committees. The progress report on achievements of the Strategic Plan will be reported by the Implementing Committee to the Evaluation Committee every three months on a schedule date. The Evaluation Committee will assess progress in achievements of Key Performance Indicators and if there were short falls, assess the reasons thereof and seek answers. Based on the assessment, corrective action / modify targets set in the Key Performance Indicators and if required modify some of the planned activities provided in the Strategic Plan, or take decision on changing implementation strategy, in terms of physical, human and financial resources. The decisions will be taken jointly by the implementing and evaluation committees under the chairmanship and overall supervision of the Director/Principal of the institution.

The Report along with the corrective actions will be presented by the Principal to the BOG.